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*Melbourne, Australia*

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November 14–16, 2023



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**IEOM Society**

"Achieving and Sustaining Operational Excellence"

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**Industrial Engineering and Operations Management Society International**

IEOM Society International, 21411 Civic Center Dr., Suite 205, Southfield, Michigan 48076, USA

Phone: 1-248-450-5660, Email: [info@ieomsociety.org](mailto:info@ieomsociety.org)

## Welcome to the Second Australia International Conference on Industrial Engineering and Operations Management, 2023

### To All-Conference Attendees:

We would like to begin by acknowledging the Traditional Custodians of the land on which we gather. We would also like to pay our respects to their elders past and present.

On behalf of the IEOM Society International, we would like to welcome you to the Second Australian **International Conference on Industrial Engineering and Operations Management**, November 14 -16, 2023, to be held at Batman's Hill Hotel on Collin, Melbourne. This unique international conference provides a forum for academics, researchers, and practitioners from many industries to exchange ideas and share recent developments in the fields of industrial engineering and operations management. This diverse international event provides an opportunity to collaborate and advance the theory and practice of major trends in industrial engineering and operations management. There were more than 400 papers/abstracts submitted from 25 countries. After a thorough peer-review process, more than 200 have been accepted for presentation and publication. The program includes many cutting-edge topics in industrial engineering and operations management. This conference will address issues concerning the continuous improvement of quality and service. The IEOM Society is delighted to have the following keynote speakers:

1. **David Aaron Karr**, CPEng, FIEA, President, Industrial Engineers Australia (IEA), Australia
2. **Prof Daniel Samson**, Chair in Management, Department of Management and Marketing, University of Melbourne, Melbourne, Australia
3. **Peter Galvin**, PhD, Professor and Associate Dean, Research, School of Business and Law, Edith Cowan University, WA, Australia
4. **Prof. (Em.) Raphael Grzebieta AM**, Emeritus Professor (Road Safety), Transport and Road Safety (TARS) Research, School of Aviation, University of New South Wales, Sydney, Australia
5. **Dr. Paul Childerhouse**, PhD, Professor and Head of Department, Logistics and Supply Chain Management, RMIT University, Melbourne, Victoria, Australia
6. **Professor Charles Mbohwa**, Ph.D., Visiting Professor, University of Johannesburg, South Africa
7. **Prof. Sardar M. N. Islam (Naz)**, PhD, LL. B (Law), Professor, ISILC, Victoria University, Melbourne, Australia; Distinguished Visiting Professor of AI, UnSri, Adjunct Professor of IT and Business, Armstrong Institute, Melbourne
8. **Dr. Md Abdus Samad Kamal**, PhD, Associate Professor, Graduate School of Science and Technology, Gunma University, Kiryu, Japan
9. **Peter Robertson**, PhD, Honorary Research Fellow, University of Wollongong (UOW), Australia and 39 years of leadership history in various industries in Australia
10. **Prof Lihai Zhang**, PhD, M.Eng, CPEng, NPER, FIEAus, Professor of Infrastructure Protection & Management, Discipline Leader of the Engineering Management group, University of Melbourne, Melbourne, Australia
11. **Indra Gunawan, PhD**, Associate Professor, Adelaide Business School, Faculty of Arts, Business, Law and Economics, University of Adelaide, Australia
12. **Prof Rahmat Nurcahyo**, PhD, Industrial Engineering Department, Universitas Indonesia (UI), Jakarta, Indonesia
13. **John Blakemore**, PhD, CEO, Blakemore Consulting International, Adjunct Professor, University of Newcastle, Newcastle, NSW, Australia

At this conference, the IEOM Society will hold its 45<sup>th</sup> Global Engineering Education session. It will feature distinguished speakers who will discuss workforce readiness and engineering education challenges and opportunities. The 44<sup>th</sup> IEOM Industry Solutions will showcase and feature major topics including IoT, AI, Data Analytics, iCloud, Cyber security, Automation, Digital Manufacturing, MSV, and industry best practices. The 24<sup>th</sup> IEOM Global Supply Chain and Logistics will address the global logistic challenges due to the pandemic. The 15<sup>th</sup> IEOM Global Business Management will focus on business operations improvement. Panel sessions have been planned: Global Engineering Education, Supply Chain, Women in Industry and Academia, Lean Six Sigma and Diversity & Inclusion sponsored by Ford Motor Company.

The IEOM Society would like to express our deep appreciation to our sponsors, university partners, organization partners, exhibitors, authors, reviewers, keynote speakers, panelists, track chairs, advisors, the local committee, and the many volunteers who have given so much of their time and talent to make this unique international conference an overwhelming success.

Our very best wishes to all of you for a successful and memorable event.



**Conference Chair**  
Dr Felix Kin Peng Hui  
Associate Professor  
Department of Infrastructure  
Engineering, University of Melbourne,  
Melbourne, Australia.



**Conference Co-chair**  
Associate Prof. Dr. Matthew Pepper  
School of Business, Faculty of  
Business and Law, University of  
Wollongong NSW 2522 Australia



**Conference Co-chair**  
Dr Mohsin Malik, Associate Professor  
& Director – Master of Project  
Management, Swinburn Business  
School, Swinburn University of  
Technology, Melbourne, Australia.



**Conference Co-chair**  
Ambika Zutshi  
Professor (Management),  
School of Business, University of  
Southern Queensland, Australia



**Conference Co-chair**  
Dr. Imran Ali, Senior Lecturer  
School of Business and Law Centre  
for Regional Economies and Supply  
Chains, Central Queensland  
University (CQU)  
Melbourne, Australia



**Conference Co-chair**  
Dr. Ahad Ali  
Associate Professor  
Director of IE Programs  
Lawrence Tech, Michigan, USA  
Executive Director, IEOM Society



**Conference Co-chair**  
Dr. Md Mizanur Rahman  
Western Sydney University  
Director of IEOM Australia  
Operations  
Sydney, Australia



**Conference Program Chair**  
Prof. Donald Reimer  
Chief Operating officer  
IEOM Society International  
President, The Small Business  
Strategy Group  
Southfield, Michigan, USA

# Keynote Speakers – Room 1

Conference Welcome and Opening: Tuesday, November 14, 2023, 10:00 – 10:20 am

Welcome Address by Conference Chair:



**Dr Felix Kin Peng Hui**  
**Associate Professor of Engineering Management and an Academic Specialist**  
**Department of Infrastructure Engineering**  
**University of Melbourne**  
**Melbourne, Australia**

Keynote I (Opening Keynote): Tuesday, November 14, 2023, 10:20 – 11:00 am



**David Aaron Karr, CEng, FIEA**  
**President, Industrial Engineers Australia (IEA), Australia**

David Graduated as an Industrial Engineer BSc (Eng Mech in the Industrial Option) in 1976 at University of Witwatersrand (Wits), Johannesburg, South Africa in 1976. He received a Graduate Diploma in Engineering at Wits 1979. David has worked in various Production and Industrial Engineering roles in manufacturing, service industries and consultancy for over 45 years in South Africa, Canada and Australia. He also has training experience as a lecturer(casual) at TAFE (technical college) for 13 years. He has worked for Siemens (Routing Eng) and Colgate Palmolive (IE) (South Africa), Pirelli Cables (IE) and Canada Post (IE) (Canada), BOC Gases (Australia)(Production & Project Manager) across production quality, project management, supply chain management, design and improvements of production line and layouts of work area and data optimisation. Industry experience included batch and process type manufacturing as well as large and small sites mainly with

large multinational or national companies. He has its own Business Consultancy undertaking passenger surveys, time and motion studies, setting up preventative maintenance systems for various clients and introduction of digitised autonomous processes. David has been very active in professional organisations in Canada (Canadian Society of Industrial Engineers (CSIE) and in Australia (Industrial Engineers Australia (IEA) and Engineers Australia (EA)). He is a fellow and Federal President of Industrial Engineers Australia and Chartered Professional Engineer of Engineers Australia.

Keynote II: Tuesday, November 14, 2023, 11:00 – 11:40 am



**Prof Daniel Samson**  
**Chair in Management**  
**Department of Management and Marketing**  
**University of Melbourne, Melbourne, Australia**

Danny Samson originally qualified and worked as a Chemical Engineer, in a multinational company, before completing his PhD at AGSM, UNSW. He was a lecturer at AGSM, then Assistant professor at the University of Illinois, before returning to Australia in 1985 to join Melbourne Business School. He was appointed as professor of Operations Management, then Leslie Froggatt Chair of Manufacturing Management there from 1988. In 1999, he was appointed Chair of Management in the newly formed Department of Management in The University of Melbourne's Faculty of Business and Economics. He has served as Associate Dean and Head of that Department. Outside the University he has served as Director of the Transport Accident Commission (TAC), member of the Karpin Federal Task Force inquiry into Australia's Leadership and Management, and given advice

to many government and business organisations. This included the National Australia Bank (Group CEO and Top team) for a decade on business strategy, Fletcher Challenge on Operations Strategy, and he has more recently been engaged by Toyota in Australia, as examples. His innovations inside the University of Melbourne included design and Directorship of the Master of Supply Chain Management and Master of Enterprise (post experience) degrees, and many short-courses for business organisations. Danny has published over 150 papers and journal articles, and a dozen books. The books cover his range of expertise, with titles including Managerial Decision Analysis, Manufacturing and Operations Strategy, Innovation and Entrepreneurship, Implementing Strategic Change, and Strategic Leadership. He has supervised many PhD students, and teaches a wide range of subject from undergraduate Principles of Management, through to the doctoral level Advanced Operations Management.

Keynote III: Tuesday, November 14, 2023, 11:40 am – 12:20 pm



**Professor Peter Galvin, PhD**  
**Associate Dean, Research**  
**School of Business and Law**  
**Edith Cowan University, WA, Australia**

Peter Galvin was attracted to ECU as an institution that really cares for students whilst simultaneously valuing research. As Associate Dean, Research for SBL, Peter is keen to develop and implement strategies that will support the further development of the School's rapidly growing research prowess. Prior to taking on the ADR role, Peter was the MBA Director and oversaw a series of significant changes to the MBA degree and its delivery model. Before joining ECU, Peter was employed at Curtin University and has also held roles at Northumbria University (UK), California Polytechnic State University and Queensland University of Technology (QUT). He has also held Visiting positions at State University of New York at Stony Brook, Giessen University (Germany), ESC



Toulouse (France), Ilmenau Technical University (Germany) and ESC La Rochelle (France). Peter has won Faculty, University and National level teaching awards, and has been an assessor for the Australian Learning and Teaching Council (ALTC). He has published a number of textbooks with the latest being the 6<sup>th</sup> edition of *Strategic Management* by Hubbard, Rice and Galvin through Pearson. Peter is an active researcher with publications in a wide variety of journals ranging from *Journal of Business Ethics* through to *Managerial and Decision Economics*. His most recent work considers issues pertaining to the boundary of the firm, dynamic capabilities and modular architectures. Between 2011 and 2014, Peter was the Editor-in-Chief of *Journal of Management & Organization*. Peter has graduated over 20 doctoral students as lead supervisor. Peter received his PhD and a B. Com (Hons) from the University of Western Australia. Prior to entering academia, Peter worked in management consulting both locally and on the east coast of Australia.

Keynote IV: Tuesday, November 14, 2023, 12:20– 1:00 pm



**Prof. (Em.) Raphael Grzebieta AM**  
**Emeritus Professor (Road Safety)**  
**Transport and Road Safety (TARS) Research**  
**School of Aviation, University of New South Wales**  
**Sydney, Australia**

**Adjunct Professor (Forensic Engineering)**  
**Department of Forensic Medicine at Monash University**  
**Victorian Institute of Forensic Medicine**  
**Melbourne, Australia**

Dr. Raphael Grzebieta AM is Professor Emeritus in road safety at the Transport and Road Safety (TARS) Research Centre within the School of Aviation at the University of New South Wales (UNSW), Sydney. He is also an Adjunct Professor at Monash University's Department of Forensic Medicine located at the Victorian Institute of Forensic Medicine, in forensic engineering, vehicle and road infrastructure crashworthiness, crash reconstruction, injury biomechanics and road safety. He is currently Editor-in-Chief of the journal 'Safety' with MDPI. He has around 30 years of research and professional experience as well as around 350 research publications, supervised numerous PhD graduates and received several national and international major research grants and life time achievement awards mainly in road safety. More recently, he was made a Member of the Order of Australia (AM) for his significant service to the transport industry through road safety research and promotion. Research teams he has led or been involved with have carried out numerous laboratory and field tests on road vehicles, road safety barriers, vulnerable road users (pedestrians, cyclist and motorcyclists) and more recently off-road quad bikes and Side by Side (SSV) vehicles. He regularly provides expert witness reports and court evidence, having carried out over 200 in-depth crash investigations and accident reconstruction analyses for Coroners, Police, Public Prosecutors, Work Regulators, CTP Insurers and legal firms.

## Wednesday, November 15, 2023

Keynote V: Wednesday, November 15, 2023, 10:20 – 11:00 am



**Paul Childerhouse, PhD**  
**Professor and Head of Department**  
**Logistics and Supply Chain Management**  
**RMIT University, Melbourne, Victoria, Australia**

Paul heads up the supply chain and logistics department at RMIT University. His current research focusses on supply chain network resilience and sustainability. Dr Childerhouse is best known for his research into demand chain management, supply chain uncertainty and integration. His empirical data collection and auditing approach has provided him with first-hand experience across a range of sectors, including construction, pharmaceutical, retail, automotive, pulp and paper, health, 3PL and food processing. Supply chain sustainability

has become a major area of focus with several studies into the transformation of food supply chains in Southeast Asian and New Zealand. Paul has published over 60 peer reviewed articles in a multitude of journals including: Journal of Operations Management, Journal of Construction and Engineering Management, International Journal of Logistics Management, Production Planning and Control, International Journal of Production Economics and OMEGA.

Keynote VI: Wednesday, November 15, 2023, 11:00 – 11:40 am



**Professor Charles Mbohwa, Ph.D. – IEOM Vice President, 2023-2025**  
**Visiting Professor, University of Johannesburg, South Africa**  
**Past Pro-Vice Chancellor Strategic Partnerships and Industrialisation, University of Zimbabwe, Harare, Zimbabwe**

Professor Charles Mbohwa is a Visiting Professor at University of Johannesburg, South Africa. He was a Pro-Vice Chancellor Strategic Partnerships and Industrialisation at University of Zimbabwe and an affiliated Professor in the Faculty of Engineering and the Built Environment. He is an established researcher and professor in the field of sustainability engineering and energy. He was the Chairman and Head of Department of Mechanical Engineering at the University of Zimbabwe from 1994 to 1997 and was Vice-Dean of Postgraduate Studies

Research and Innovation in the Faculty of Engineering and the Built Environment at the University of Johannesburg from 2014 to 2017. He has published more than 350 papers in peer-reviewed journals and conferences, 10 book chapters and three books. He has a Scopus h-index of 11 and Google Scholar h-index of 14. Upon graduating with his BSc Honours in Mechanical Engineering from the University of Zimbabwe in 1986, he was employed as a mechanical engineer by the National Railways of Zimbabwe. He holds a Masters in Operations Management and Manufacturing Systems from University of Nottingham and completed his doctoral studies at Tokyo Metropolitan Institute of Technology in Japan. He was a Fulbright Scholar visiting the Supply Chain and Logistics Institute at the School of Industrial and Systems Engineering, Georgia Institute of Technology, a Japan Foundation Fellow, is a Fellow of the Zimbabwean Institution of Engineers and is a registered mechanical engineer with the Engineering

Council of Zimbabwe. He has been a collaborator in projects of the United Nations Environment Programme. He has also visited many countries on research and training engagements including the United Kingdom, Japan, Germany, France, the USA, Brazil, Sweden, Ghana, Nigeria, Kenya, Tanzania, Malawi, Mauritius, Austria, the Netherlands, Uganda, Namibia and Australia. He has had several awards including British Council Scholarship, Japanese Foundation Fellowship, Kubota Foundation Fellowship; Fulbright Fellowship.

Keynote VII: Wednesday, November 15, 2023, 11:40am – 12:20 pm



**Prof. Sardar M. N. Islam (Naz), Ph. D., LL. B. (Law)**  
**Professor, ISILC, Victoria University, Melbourne, Australia**  
**Distinguished Visiting Professor of Artificial Intelligence, UnSri**  
**Adjunct Professor of IT and Business, Armstrong Institute, Melbourne**  
**Editor-in-Chief: IAIC Transactions on Artificial Intelligence**

Professor Sardar M.N. Islam has lived, studied, worked and travelled (extensively) in different countries over a long period of time. He adopts a global and humanistic approach in his research and academic works. In his research, he has undertaken rigorous scientific studies of universal and emerging issues in several disciplines. Currently, he is a Professor at Victoria University's Institute for Sustainable Industries and Liveable Cities. He was a Professor of Business, Economics and Finance from 2007 to 2017, and has had many years of academic

work experience in teaching, supervision, and multi-disciplinary research. He has published extensively across a broad range of disciplines. His research has attracted international acclaim, leading to a number of appointments as distinguished visiting professor, visiting professor or adjunct professor in artificial intelligence, accounting, industrial engineering, finance, economics and management in several different countries. Professor Islam has also received many invitations to address international conferences as a keynote speaker. He has published articles in leading international journals including: Review of Quantitative Finance and Accounting, Journal of Optimisation Theory and Applications, Journal of Management and Industrial Optimisation, Annals of Operations Research, Applied Mathematical Modelling, Economic Modelling and Journal of Modelling in Management. He has published a large number of research books in artificial intelligence and digitalisation, game theory, operations research, supply chain management, accounting, finance, business, economics and law. Each of these books makes significant scientific contributions to the literature. These books are published by prestigious publishers and the majority of his books are published in highly regarded book series. His interest and expertise are: artificial intelligence, machine learning and data analytics, game theory, agency theory and mechanism design finance, advanced econometrics, economics/health economics, accounting and corporate governance, management science/applied quantitative methods, supply chain management/applied industrial engineering/operations management, engineering analytics and management, business and marketing analytics and law.

Keynote VIII: Wednesday, November 15, 2023, 12:20 – 1:00 pm

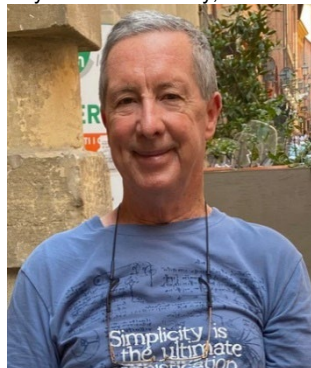


**Associate Prof. Dr. Md Abdus Samad Kamal**  
**Graduate School of Science and Technology**  
**Gunma University, Kiryu, Japan**

Dr. Md Abdus Samad Kamal is a Professor at the Graduate School of Science and Technology, Gunma University, Japan. He received Ph.D. degree from Kyushu University, Japan, in 2006. Earlier, he was a Researcher at The University of Tokyo, Japan, a Visiting Researcher with Toyota Central R & D Labs., Inc., Japan, and a Senior Lecturer at the School of Engineering, Monash University, Malaysia campus. His research interests include intelligent transportation systems, cooperative control of connected and automated vehicles, and the applications of model predictive control. Over a decade, he has been jointly working in various research projects in collaboration with Japanese car manufacturers and/or under the Grants-in-Aid for Scientific Research of Japan Society for the Promotion of Science (JSPS). Dr. Kamal is a member of the Society of Instrument and Control Engineers (SICE), a Senior Member of the Institute of Electrical and Electronic Engineers (IEEE), and a Chartered Engineer of the Institution of Engineering and Technology (IET).

## Thursday, November 16, 2023

Keynote IX: Thursday, November 16, 2023, 10:20 – 11:00 am



**Dr Peter Robertson**  
**Honorary Research Fellow**  
**University of Wollongong (UOW), Australia and**  
**39 years of leadership history in various industries in Australia**

Peter Robertson is an Honorary Research Fellow and Fellow of the University of Wollongong (UOW), Australia. Dr Robertson has 39 years of industrial experience working for the Broken Hill Proprietary Company Limited (BHP) and BlueScope Steel. Roles he fulfilled during this time included Unit Metallurgist, Rolling Mill Superintendent, Group Manager Planning, and Manager Planning and Business systems. His last role was as Vice President Operations Planning within BlueScope Steel. He has three years of lecturing experience at UOW where he lectured on Supply Chain Management (SCM), Logistics, Procurement and Quantitative Analysis. Dr Robertson also spent five years consulting including assignments related to strategy and structure, business process improvement, value-stream mapping, project readiness and assurance, and information systems design. In his consulting role he has worked with companies such as Woodside Petroleum, Port Kembla Coal Terminal, Port Kembla Port Corporation, Vale (Brazil), Anglo American, Chalco, BHP Iron Ore, Australian

Nuclear Science and Technology Organisation (ANSTO) and Hatch Associates. Dr Robertson obtained both his master's degree (Logistics and Operations Management) and PhD (SCM and Logistics) from UOW. Whilst still engaged in research, Dr Robertson has been focused, in recent years, on the writing of three supply chain and logistics related textbooks i.e., Supply Chain Analytics (2021), Supply Chain Processes (2021), and Supply Chain Leadership (2022).

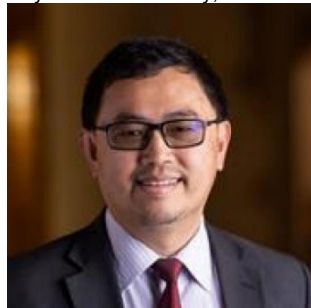
Keynote X: Thursday, November 16, 2023, 11:00 – 11:40 am



**Prof Lihai Zhang, PhD, M.Eng, CPEng, NPER, FIEAus**  
**Professor of Infrastructure Protection & Management**  
**Discipline Leader of the Engineering Management group**  
**University of Melbourne, Melbourne, Australia**

Lihai is a Professor of Infrastructure Protection & Management and the Discipline Leader of the Engineering Management group at The University of Melbourne. He is best known for his expertise in engineering reliability analysis and asset management. Using porous media mechanics & engineering reliability analysis, his research focuses on: Reliability-based life-cycle assessment of built infrastructure, Building cladding subject to hailstorm impact, and Structural health monitoring using advanced non-destructive testing techniques. Lihai's expertise in interdisciplinary research gives a leading advantage and a unique angle to solving outstanding problems in Biomedical Engineering fields, such as Orthopaedic Biomechanics & Mechano-Biology.

Keynote XI: Thursday, November 16, 2023, 11:40 am – 12:20 pm



**Dr Indra Gunawan**  
**Associate Professor, Adelaide Business School**  
**Faculty of Arts, Business, Law and Economics**  
**University of Adelaide, Australia**

Indra Gunawan is Associate Professor in Complex Project Management and Program Coordinator of Postgraduate Project Management in the Adelaide Business School, Faculty of Arts, Business, Law and Economics, the University of Adelaide. He received his PhD in Industrial Engineering and MSc in Construction Management from Northeastern University, USA. Prior to joining the University of Adelaide, he was the postgraduate program coordinator for Maintenance and Reliability Engineering at Monash University. Previously he has also taught in the Department of Mechanical and Manufacturing Engineering at Auckland University of Technology, New Zealand and worked as the Head of Systems Engineering and Management program at

Malaysia University of Science and Technology (in collaboration with the MIT, USA). His current research interests include system reliability modelling, maintenance optimisation, project management, applications of operations research, and operations management. He is actively involved in the Asset Management Council, a technical society of Engineers Australia. Indra's work has appeared in many peer-reviewed journals such as International Journal of Project Management; Journal of Construction Engineering and Management; IEEE Transactions on Engineering Management; International Journal of Production Research; Reliability Engineering and System Safety; IEEE Transactions on Industrial Informatics; International Journal of Reliability, Quality and Safety Engineering; Quality and Reliability Engineering International; International Journal of Project Organisation and Management; and International Journal of Quality and Reliability Management. He also serves as an Editorial Board member for International Journal of Project Organisation and Management; International Journal of Information Technology Project Management; and International Journal of Performability Engineering.

Keynote XII: Thursday, November 16, 2023, 12:20 – 1:00 pm



**Professor Rahmat Nurcahyo, PhD**  
**Industrial Engineering Department**  
**Universitas Indonesia (UI), Jakarta, Indonesia**

Rahmat Nurcahyo is a Professor in Industrial Management, Industrial Engineering Department, Universitas Indonesia. He previously served as Head of Quality Assurance and Management System Unit in Faculty of Engineering, Universitas Indonesia. His responsibility was in implementation of OBE Education System, ISO 9001, 14001 and 45001. Currently he is an IABEE Evaluator and LAM Teknik assessor for engineering education accreditation in Indonesia. He earned Masters degree in Industrial Management, University of New South Wales, Australia and received Doctor degree in Strategic Management, Universitas Indonesia. His current research interests include Sustainability, Environmental Management Systems, Quality Management Systems and Maintenance Management.

Keynote XIII: Thursday, November 16, 2023, 3:20 – 4:00 pm



**John Blakemore, PhD**  
**CEO, Blakemore Consulting International**  
**Adjunct Professor, University of Newcastle, Newcastle, NSW, Australia**

**John Blakemore** successfully completed a PhD, MSc and BSc. He is a Certified Management Consultant (CMC), Certified Professional Engineer CPEng and CPEng (UK) and Director of the Leading Edge Initiatives. John received Hon DUniv (Newc) 2015 conferred at the University of Newcastle on the 9th April 2015. In addition he is a fellow of numerous professional societies. John's depth of experience is readily demonstrable. He has previously occupied positions as Marketing Director, Research Manager, Engineering Manager, General Manager, Research Scientist, University Lecturer and was an International Nickel Research Fellow. John is listed in Who's Who in the World for his contribution to International Management Consulting (from 1994). John's PhD was studied (2.6 yrs) under an International Research Fellowship. This Doctorate was examined by the University of Leeds (UK) and the Australian Atomic Energy Commission (AAEC) under the supervision of Prof E.O.Hall PhD. Seven international publications resulted from this work. In 2007 John was **voted one of the top 10 Engineers in Australia for Engineering Innovation** and expertise by The Professional Institution of Engineers and In 2014 was awarded "Distinguished Service Award in Industrial Engineering and Operations Management".

John sat on the Engineering and Manufacturing Committee of the Federal Government's Industrial Research and Development Board from 2000 to 2006. From 1996 to 2000 he also sat on the Board of the Australian Institute of Management and he was an Associate of the Australian Graduate School of Engineering Innovation (AGSEI) from 1996 to 2002.



## 45<sup>th</sup> IEOM Global Engineering Education DISTINGUISHED SPEAKERS

8:00 – 9:45 am, Tuesday, November 14, 2023 – Room 1 (Onsite)

**Session Chair:** Dr. Nilupa Herath, Lecturer, University of Melbourne, Australia

### Speaker I



**Jan Harm Christiaan Pretorius**  
**Professor Postgraduate School of Engineering Management**  
**University of Johannesburg, South Africa**

Jan Harm Christiaan Pretorius obtained his BSc Hons (Electrotechnics) (1980), MEng (1982) and DIng (1997) degrees in Electrical and Electronic Engineering at the Rand Afrikaans University and an MSc (Laser Engineering and Pulse Power) at the University of St Andrews in Scotland (1989), the latter cum laude. He worked at the South African Atomic Energy Corporation (AEC) as a Senior Consulting Engineer for 15 years. He also worked as the Technology Manager at the Satellite Applications Centre (SAC) of the Council for Scientific and Industrial Research (CSIR). He is currently a professor: Postgraduate School of Engineering Management in the Faculty of Engineering

and the Built Environment where he worked since 1998. He was Head of School: Postgraduate School of Engineering Management (2015 – 2021). He has co-authored over 300 research papers and supervised over 70 PhD and over 300 Master's students. He is a registered professional engineer, professional Measurement and Verification (M&V) practitioner, senior member of the Institute of Electrical and Electronic Engineering (IEEE), fellow of the South African Institute of Electrical Engineers (SAIEE) and a fellow of the South African Academy of Engineering.

### Speaker II



**Prof Lu Aye, PhD**  
**Department of Infrastructure Engineering**  
**University of Melbourne, Australia**

Lu Aye is a Professor in the Department of Infrastructure Engineering at the University of Melbourne, Australia. Prof. Aye has more than 40 years of engineering experience in university teaching, research, development, demonstration and commercialisation of renewable energy and energy efficiency technologies. He has been internationally recognised as an expert in low-carbon technologies for built environment applications. His research areas include heating, ventilation, air-conditioning and refrigeration systems, waste to resources, complex systems modelling. Prof. Aye applied phenomenological modelling and simulation approaches for optimising energy systems. He also utilised computational and participatory approaches for modelling socio-ecological systems under deep uncertainty. These system models have been applied for identifying the effects of policy interventions and

robust decision making. He has been recognised as a leading expert in modelling, simulation, optimisation and forecasting of complex systems behaviours.

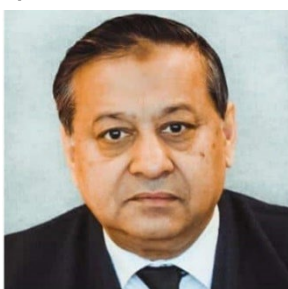
### Speaker III



**Dr. Nilupa Herath**  
**Lecturer, Department of Infrastructure Engineering**  
**University of Melbourne**

Dr. Nilupa Herath is a Lecturer at the Department of Infrastructure Engineering in the University of Melbourne. She is an experienced structural Engineer who has worked in Australia and overseas in variety of construction projects. Nilupa's research interest include Sustainable buildings, bridge engineering, tall buildings, earthquake engineering, engineering education and engineering management.

### Speaker IV



**Professor Akhtar Kalam**  
**Leader – Smart Energy Research Unit**  
**College of Sport, Health and Engineering (D524)**  
**Victoria University, Victoria, Australia**

**Presentation Title:** *Experience with the introduction of problem-based learning curriculum to the Bachelor of Engineering degree courses*

This presentation gives an overview and background briefing on introduction of Problem-Based Learning as the central educational paradigm and methodology in engineering courses. Related courses can include all of engineering and associated double degrees programs. Problem-Based Learning (PBL) represents a radical change in educational approach. In the first year of implementation, it has been difficult to convey the full picture in any standard form of Course Change documentation. Initially the intention was to replace conventional engineering program by the PBL curricula initially in Year 1, and then to introduce PBL progressively to the Second, Third and Fourth Years progressively. However, with the introduction of the PBL came associated issues of delivery, academic staff expertise, motivation and interest of academic staff, resources, academic standards and quality, recognition by the accreditation bodies like Engineers Australia. The first sections of this presentation will outline the rationale for the change, the nature of PBL, and the way in which it achieves its objectives, before moving to the specifics of its introduction in Electrical Engineering – in particular the issues faced and how it was resolved.



**Global Lean Six Sigma and Operations Excellence**  
**November 14, Tuesday, 4:00 – 5:45 pm – Onsite Room 1**  
Session Chair: Dr Seyed Mojib Zahraee

**Speaker I:**

**Theo Goutzioulis**  
**Senior Process Transformation Lead / Scrum Lead / Product Owner**  
**Telstra**  
**Melbourne, Victoria, Australia**

**Speaker II:**

**Dr. Guilherme Tortorella**  
**Senior Lecturer**  
**University of Melbourne**  
**Parkville, Victoria, Australia**

**Speaker III:**



**Dr Seyed Mojib Zahraee**  
**Research Assistant**  
**RMIT School of Engineering**  
**RMIT University**  
**Melbourne, Australia**

Dr Seyed Mojib Zahraee is a research assistant at RMIT School of Engineering. His research domains are sustainable biomass supply chain, supply chain management, Lean manufacturing and Six Sigma sustainable renewable energy value chain, transportation and logistics, sustainability, and optimizing operations. Seyed has published over 60 research papers in multidisciplinary fields with more than 2,000 citations. Additionally, he has reviewed more than 250 papers for reputational journals and conferences.

**Speaker IV:**



**Dr. Ahad Ali**  
**Associate Professor**  
**Director of Bachelor of Science in Industrial Engineering**  
**Director, Master of Science in Industrial Engineering**  
**Director of Smart Manufacturing and Lean Systems Research Group**  
**A. Leon Linton Department of Mechanical, Robotics and Industrial Engineering**  
**Lawrence Technological University, Southfield, Michigan, USA**  
**Executive Director, IEOM Society International**

Dr. Ahad Ali is an Associate Professor and Director of Bachelor of Science in Industrial Engineering and Master of Science in Industrial Engineering in the A. Leon Linton Department of Mechanical, Robotics and Industrial Engineering at the Lawrence Technological University, Michigan. Dr. Ali is the Director of Smart Manufacturing and Lean Systems Research Group. He earned B.S. in Mechanical Engineering from Khulna University of Engineering and Technology, Bangladesh, Masters in Systems and Engineering Management from Nanyang Technological University, Singapore and Ph.D. in Industrial Engineering from University of Wisconsin-Milwaukee. Dr. Ali is the Executive Director of IEOM Society and Conference Chair of the Sixth International Conference on Industrial Engineering and operations Management, Kuala Lumpur 2016. He advised six doctorate students in Doctor of Engineering in Manufacturing Systems. Dr. Ali has published journal and conference papers. He was past President of IIE Lean Division. Dr Ali has done research projects with Chrysler, Ford, DTE Energy, Delphi Automotive System, GE Medical Systems, Harley-Davidson Motor Company, International Truck and Engine Corporation (ITEC), National/Panasonic Electronics, and Rockwell Automation. His research interests include quality, reliability, six sigma, manufacturing, simulation, optimization, scheduling, maintenance, e-manufacturing, lean, CAE and GD&T and. He is a member of ASEE, IEEE, IEOM, INFORMS, and SME.

# 15<sup>th</sup> IEOM Global Business Management Education

8:00 – 9:40am, November 15, 2023 – Room 1 (Onsite)

**Session Chair:** Prof. Dr Aries Susanty ST MT.

## Speaker I



**Dr. Prof. Dr Aries Susanty ST MT.**  
**Head of Optimization and Industrial Planning System Laboratory**  
**Industrial Engineering Department**  
**Diponegoro University**  
**Central Java, Indonesia**

Aries Susanty is a Professor of Industrial Engineering with research areas in the field of supply chain governance (relationship between buyer, seller, contract, and supply chain performance), green supply chain management and circular economy, sustainable supply chain management, halal supply chain management, performance management on Small and Medium Enterprises, and service management (customer behavior, customer satisfaction, and customer loyalty). Aries Susanty is also head of the Industrial Optimization and Statistics Laboratory. Her research track record has been demonstrated by winning many research grants from the internal university of Diponegoro and outside the university, such as from the Directorate General of Higher Education,

Research and Technology and the National Research and Innovation Agency, and directly from Indonesia industry sectors. Based on her research, Prof Aries Susanty has published over 85 papers in refereed academic journals and conference proceedings. Furthermore, Prof Aries Susanty is an engineer by education with a strong background in contemporary simulation and modelling techniques, including discrete-event simulation and system dynamics. In addition to his research activities, Prof Aries Susanty has also been actively involved in learning initiatives within the Department of Industrial Engineering, Diponegoro University, including creating research-informed teaching cases and supervising Masters student's theses.

## Speaker II



**Rajkumar Elagiri Ramalingam Ph.D.**  
**Visiting Professor, Applied Artificial Intelligence Institute(A2I2)**  
**Deakin University, Melbourne**  
**Program Manager (Applied AI Algorithms), Apex Semi USA/ APAC**

*Emotional Intelligence based stress management system – work place stress analysis*

Dr. E.R. Rajkumar is a Visiting Professor in Applied Artificial Intelligence Institute(A2I2) and also program manager in Apex semiconductors. Mr. Rajkumar holds a Bachelor of Engineering degree in Electronics and Communication Engineering from Madras University, India and a Master of Technology degree in Biomedical Engineering from VIT University and Ph.D. in Electronics, Microelectronics, and Microwave Optoelectronics from University of Rouen,

France. He has successfully completed executive education from UC Berkeley and Haas Business School on new business model innovation, customer segment identification and MVP validation. He is also certified a scrum master CSM. He has more than 25 years of experience in teaching and learning along with industry. He has taught courses in embedded communications, Machine Learning, Deep Learning, Bio-signal processing and MEMS. Dr. Rajkumar also served as Chief Information Officer for iRAD (integrated Road Accident Database Management System) at IIT Madras, India. Previously he was with Bosch as Senior Architect with deftness in supporting multiple business units, competency & innovative product development. Supported Health care department from its inception and helped to bring AI-IOT products with compliances and certification. He has represented India as an Indian Delegate to The Netherlands on Innovative & Futuristic health care product development. Also, have demonstrated expertise in business model innovation, lean start-up methodology & strategic business planning. Successfully guided Two PhDs and Two MS by research along with over 150 Capstone Projects for bachelors and Master's Engineering. Dr. Rajkumar's passion towards AI-IOT has started with his Computer based brailor from 2006 and striving his research in the area of cognitive computing & effective computing towards wearables; stress management; sleep disorders; and meditation and its impact on different health conditions. Considering his contribution and research collaboration in digital technology with Australia, he has been awarded Australian Permanent Resident through Global Talent Pathway. He has 50 plus publications and three patents.

## Speaker III



**Dr. Muhammad Fazal Ijaz**  
**Lecturer**  
**Melbourne Institute of Technology**  
**Melbourne, Victoria, Australia**

**Presentation Title:** *Artificial intelligence-based medical diagnosis support system: critical factors in the acceptance from physician's perspective.*

Muhammad Fazal Ijaz is working as a Lecturer (Assistant Professor) at the Melbourne Institute of Technology, Melbourne Australia. Throughout his tenure at multiple academic institutions, including roles as a Research Fellow at the University of Melbourne, and Assistant Professor at institutions in South Korea and Mexico, He has consistently demonstrated a commitment to exemplary teaching and research practices. Acting as a co-supervisor for research scholars at prestigious institutions such as Dongguk University, Sejong University, and Silesian University of Technology in Poland, I have demonstrated a dedicated commitment to mentoring and guiding the future generation of researchers. He has published numerous research articles in several international peer-

reviewed journals, including IEEE Transactions on Industrial Informatics, Scientific Reports, Nature, IEEE Access, Journal of Food Engineering, Asia Pacific Journal of Marketing and Logistics, and Sustainability. His research interests include Machine learning, Healthcare 4.0, Internet of Things, Big data, and Industry 4.0



**Speaker IV**

**John Kazemzade**  
**Program Manager**  
**Tata Consulting Services**  
**Melbourne, Australia**

John Kazemzadeh is a Program Manager at Tata Consultancy Services (TCS) with over fifteen years of experience in both government and private sectors. His adept management of large and small-scale projects has resulted in significant cost savings, improved process efficiency, and ensured regulatory compliance. John's expertise spans project management methodologies, SDLC, ITSM, Lean Six Sigma, and business process management. In his current role, John is leading a team of more than 20 professionals working on a project to develop origination and onboarding features for a new credit card platform at NAB. Holding a Bachelor of Information Technology from

Amirkabir University (Tehran Polytechnic) and a Master of Information Systems from the University of Melbourne, John's academic pursuits have led to several publications in the areas of business process management and human-computer interaction. He has also acquired multiple professional certifications, including but not limited to SAFe Lean Portfolio Management, Professional Scrum Product Owner (PSPO), Professional Scrum Master (PSM), PRINCE2 Practitioner, and Lean Six Sigma.

# 24<sup>th</sup> IEOM Global Supply Chain and Logistics

## DISTINGUISHED SPEAKERS

November 15, 2:00 – 3:40 pm – Room 1 (Onsite)

Session Chair: Dr Sean Arisian PhD PEng

### Speaker I



**Dr Sean Arisian PhD PEng**  
**Associate Professor Supply Chain and Logistics**  
**La Trobe Business School**  
**La Trobe University, Australia**

Dr. Sean Arisian is the founder of the Logistics and Supply Chain Management postgraduate programs at La Trobe Business School. He has designed, developed, coordinated, and taught multiple subjects in the areas of supply chain, operations, and project management. As an applied operations researcher, Dr. Arisian has a special interest in modeling and solving complex Logistics and Supply Chain Management problems. His multidisciplinary research addresses issues related to supply chain security and resiliency at the international trade-global supply chains interface. Additionally, Dr. Arisian conducts research on the development of transformative and digital supply chain strategies that promote sustainability and indigenous innovation at regional and national levels."

### Speaker II



**Associate Professor Tay Huay Ling**  
**Head of International Trade Management Minor**  
**School of Business/ Logistics and Supply Chain Management**  
**Singapore University of Social Sciences, Singapore**

Associate Professor Tay Huay Ling holds a PhD in Business and Economics (Operations Management) from the University of Melbourne, Australia. She also has an MSc in Industrial Engineering from Georgia Institute of Technology, an MSc in Logistics and Supply Chain Management from the National University of Singapore, and a BEng (Hon) in Chemical Engineering from the National University of Singapore. She teaches operations, supply chain management courses, and lean six sigma. Her research focuses on lean six sigma, sustainable business values, healthcare, and humanitarian logistics. Before entering academia, she gained experience in supply network analysis, chemical logistics, healthcare operations, and process improvements. As a pro-bono consultant for non-

profit organisations, she assists in operations and supply chain performance tracking and improvements through process streamlining and workflow redesigns. She has published journal articles on operations management and process improvements in logistics, healthcare, community care, and higher education.

### Speaker III



**Flavio Romero Macau, PhD**  
**Associate Professor**  
**Associate Dean (Teaching and Learning), School of Business and Law**  
**Edith Cowan University, WA, Australia**

In the past 10 years, Flavio supervised 20+ research projects; lectured 70+ units to 2,500+ students; published one book, three case studies, and 10+ international peer-review articles; assisted 120+ short-term consulting projects. International media presence on TV (ABC News, TRT World Now), radio (The Money, BBC), newspapers (The Guardian, The Washington Post), and magazines (The Choice, MHD Logistics), reaching a combined audience of over 1.6 bn people worldwide discussing topics such as global logistics and supply chain management. Flavio has industry experience from the automotive, agroindustry, and resources sector, working with companies such

as Mercedes-Benz, BIOSEV, JBS, Anglo American, Votorantim, and NEXA Resources in Brazil, Argentina, and Peru. He has a background as an entrepreneur, having started companies like Reliasoft Brazil (1999) and Catalyst Brazil (2002). He is a keynote speaker in industry events (The State of Supply Chain Management in Australia) and conferences (Chief Supply Chain Officer Summit). WA Chapter president and national board member of ASCI. Associate editor of the RBGN journal.

### Speaker IV



**Winda Nur Cahyo, PhD**  
**Associate Professor**  
**Industrial Engineering, Universitas Islam Indonesia, Indonesia**

Winda Nur Cahyo is an Associate Professor in Industrial Engineering, Universitas Islam Indonesia. He holds a PhD from School of Mechanical, Material, and Mechatronics, the University of Wollongong Australia. He is currently the head of Master Program in Industrial Engineering, Universitas Islam Indonesia since 2018. His expertise and research interest are on the field of Engineering Asset Management and Industrial Management. He is also member of The Institute of Asset Management and also one of the founders of Indonesian Asset Management Community. He published numerous articles in reputable international journals and international conference. He is also a reviewer in reputable international journals and conference and technical committee in several reputable international conference.



Speaker V



**Peter Campbell**  
**Partner – Supply Chain and Operations Leader (Oceania)**  
**Ernst & Young**  
**Melbourne, Victoria, Australia**

***Examples of the practical application of Industrial Engineering techniques in non-traditional operational settings?***

Peter leads EY's Supply Chain and Operations practice for Oceania and the APAC region and is EY's global lead for Intelligent Operations. Peter has an engineering PhD from the Australian National University in Systems Engineering / lean manufacturing and over 20 years of experience as a process improvement specialist. During this time he has worked across a wide range of operational environments including: heavy vehicle manufacturing and maintenance, automotive, banking (retail, business and institutional), insurance, utilities, public sector, retail, health, telecommunications, logistics, IT, wealth management and defence. Peter is a member of the ANU Research School of Engineering Industry Advisory Board, is a former President of the Association for Manufacturing Excellence (Australia) and was the Victorian Government's 'Young Manufacturer of the Year' (2007).

# 44<sup>th</sup> IEOM Industry Solutions and Industry 4.0

**Industry Solutions and Industry 4.0**  
November 16, 8:00 – 9:40 am – Room 1 (Onsite)

## Session Chair



**Associate Professor Jo Staines**  
**University of Melbourne, Australia**

A highly respected and inspirational aerospace industry leader who builds and empowers teams to enthusiastically implement complex transformation projects, consistently exceeding business expectations. I have led the on time and on budget implementation of a SAP business system and processes in an Australian subsidiary and completed a successful business transformation across the procurement and supplier management, finance and program management functions. I am a passionate and enthusiastic leader of culture change and recently led implementation of a program to improve the safety culture at 1000+ employee manufacturing operation. The approach involved building a culture of personal accountability, achieved through building relationships and story telling and delivered tangible improvement in safety metrics. I am a successful contract negotiator and have completed complex contract negotiations improving the business's bottom line while managing smooth transitions

and satisfying competing stakeholder requirements. I drive a functional excellence approach to team development, starting with defining skills requirements, mapping matches, requiring development profiles and plans for each team member and regularly monitoring progress to goals.

## Speaker I



**Mahshid Zaresharif, M.Eng**  
**Process Engineer**  
**Hydrogen Solutions Development**  
**Siemens Energy Australia**  
**Melbourne, Australia**

I am pleased to introduce myself as a Hydrogen Solution Development expert with a diverse background, comprising of 8 years of experience in oil and gas and hydrogen R&D and Business Development. I hold a Bachelor's degree in Chemical Engineering and a Master's degree in Energy Systems Engineering, which have equipped me with a comprehensive understanding of the Energy industry's complexities. Throughout my career, I have had the privilege of working on various projects in different regions of the world, including the Middle East,

Europe, and Australia. My experience in Australia has primarily focused on renewable energy sources, including hydrogen, driving innovation in the field of sustainable energy, particularly in the development of hydrogen-based solutions. My passion for facilitating the Energy transition process in a feasible and comprehensible manner remains a guiding force in all my endeavors. As an esteemed speaker at the upcoming conference, I am thrilled to share my insights and experiences, highlighting the opportunities and challenges that are transforming the Energy industry.

## Speaker II



**Dr Ripon K. Chakraborty (Senior Member, IEEE)**  
**Lecturer (Assistant Professor Eqvnt.)**  
**Systems Engineering & Decision Analytics**  
**School of Engineering & Information Technology**  
**UNW Canberra, Australia**

Dr Ripon is the team leader and founder of 'The Decision Support & Analytics Research Group' at the School of Engineering & Information Technology, UNW Canberra, Australia. He serves three master's programs simultaneously, i.e., Master of Decision Analytics, Master of Engineering Science, and Master of Project Management at UNSW Canberra. He has written two book chapters and over 175 technical journal and conference papers in prestigious venues. His research interest covers a wide range of topics in Operations Research, Project

Management, Supply Chain Management, Artificial Intelligence, and Information Systems Management. Many organisations, such as the Department of Defence and the Commonwealth Government of Australia, have funded his research programs

## Speaker III



**Dr Banu (Sarikaya) Ozkeser**  
**R&D Center Manager**  
**Koluman Automotive Industry &**  
**Visiting professor in Automotive Engineering in Cukurova University, Turkey**

Dr. Banu (Sarikaya) Ozkeser, born in 1979 and working in innovation for more than 21 years, is the R&D Center section manager of Koluman Automotive Industry, Turkey. She has also been a visiting professor in Automotive Engineering in Cukurova University since 2018. She has experienced about technology management field in various big scale companies till now. Dr. Ozkeser, also patent and trademark attorney, is a fellow of numerous professional societies like TUSIAD, industry committee of Industry and Technology Ministry, etc. She has been awarded four times by international scientific organizations round the world. She's focused on innovation management, green deal, incentives, industry 4.0, industry 5.0 and industrial properties. Her experience in various

projects and submissions as a referee contributes much more in career mapping. Banu (Sarikaya) Ozkeser, who not only organized more than 160 R&D projects but also published international and national papers, continues to study in the same fields.

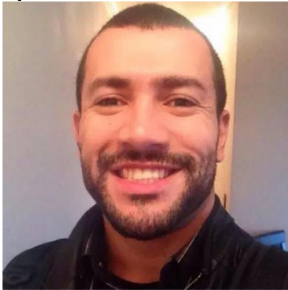


## Speaker IV



**Vikram Sachdeva**  
**Advanced Manufacturing Industry 4.0 Hub Manager (Consultant)**  
**Swinburne University of Technology**  
**Melbourne, Australia**

## Speaker V



**Dr. Adriano de Freitas**  
**Teaching Associate – PhD Scholar**  
**Monash University**  
**Melbourne, Victoria, Australia · Hybrid**

Presentation Title: Energy Efficiency application to modernise pneumatic conveying in bulk solids industry.

Dr. Adriano de Freitas is an industrial engineer with 10+ years in the field of mechanical systems, developing and building machinery, tools, engines and other innovations. He has worked on the design, development, simulation, installation, testing and maintenance of products and processes with strong problem-solving skills. He holds a Master's in innovation engineering and an industrial-academic PhD in energy. He has taught engineering technology design projects-based on collaboration between industry and academia, solving technical problems with human solutions in English, Spanish and Portuguese languages. Adriano's hobbies include: quality time in nature with family, Latin dance, marathon running and social events.



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# Global Artificial Intelligence and Machine Learning

November 16, Thursday, 2:00 – 3:45 pm – Onsite Room 3

Session Chair: Dr. Soheila Ghane

## Speaker I:



**Dr Srikanth Thudumu**  
**Senior Research Fellow**  
**Applied Artificial Intelligence Institute (A<sup>2</sup>I<sup>2</sup>)**  
**Deakin University, Melbourne, Australia**

Dr Srikanth Thudumu is a Senior Research Fellow at the Applied Artificial Intelligence Institute (A<sup>2</sup>I<sup>2</sup>), Deakin University. He specializes in translational AI research, focusing on applying state-of-the-art AI advancements to solve real-world problems, particularly identifying unknown or invisible anomalies. With a PhD in AI, his expertise primarily lies in detecting anomalies in high-dimensional big data. His research interests encompass Anomaly Detection, Big Dimensionality, Deep Reinforcement Learning (DRL), Object Tracking, Operationalising ML, and Translational/Applied AI. Notably, Dr Thudumu successfully led the commercial deployment of an AI-powered, mind-controlled autonomous wheelchair. Dr Thudumu has also secured several research grants, including that of the Defence Science Technology Group (DSTG), Australia. Additionally, he has spearheaded projects involving

the development of a Context-aware Search Engine and an AI platform for merchandise image processing.

## Speaker II



**Dr. Soheila Ghane**  
**Lead Data Scientist**  
**Co-Founder of Metaboid**  
**Melbourne, Victoria, Australia**

Soheila Ghane is Lead Data Scientist and Co-Founder of MetaBoid. She collaborates with the business leaders in devising strategies for ML/AI adoption, education, and maturity assessment. She also leads a team of data scientists in discovering new data driven opportunities, developing and productionizing best practices, and tailoring the solutions' metrics to the industry and business requirements. Soheila received her PhD degree from The University of Melbourne in the field of computer science and differentially private data analysis. She published papers in top-tier journals including IEEE Transactions and IEEE IoT journal. In her research, she proposed robust and efficient algorithms for preserving individuals' privacy while sharing and analysing their sensitive data in applications such as transportation. Her academic and leadership excellence is recognised by Google Research and IEEE Computer Society. She has been recognised by the global Anita Borg Institute as a distinguished woman in tech.

## Speaker III



**Dr. Susmita Saha**  
**Deputy Director, Ageing and Neurodegeneration, School of Psychological Sciences**  
**Monash University, Australia**  
**Image and AI Scientist, Secretary**  
**IEEE Victorian Section and Secretary, IEEE-VIC Women in Engineering**

A title of your talk: Artificial Intelligence to expedite rare disease drug development and clinical trials

Susmita Saha is a distinguished Research Fellow at the Turner Institute for Brain and Mental Health, Monash University. Her primary research focus revolves around the application of multimodal data processing especially medical imaging analysis and state-of-the-art artificial intelligence (AI) techniques to accelerate the drug development and clinical trials for rare neurodegenerative disorders. She has authored 20 high-impact articles in esteemed peer-reviewed journals and conferences. Beyond her academic publications, she holds a portfolio of 5 US patents. Currently she is leading several machine learning projects, as a chief investigator with renowned national and international experts and supervising graduate research students. Furthermore, Dr. Saha holds the position of Deputy Director for the Ageing and Neurodegeneration program within the School of Psychological Sciences at Monash University. Prior to this, she was a Postdoctoral Fellow at CSIRO (Commonwealth Scientific and Industrial Research Organisation), the national science agency of Australia (2018-2021), and at IBM Research Australia (2015-2017). In addition, her professional journey has encompassed both academia and industry, including roles in the mobile operator and medical startup sectors. Dr. Saha achieved her PhD in Biomedical Engineering from The University of Melbourne in 2016. Apart from her academic role, Saha is performing as the Secretary of IEEE Victorian Section and Secretary of IEEE-VIC Women in Engineering, contributing to develop and enrich the current and next generation STEM professionals.

## Speaker IV



**Amin Rigi**  
**Data Science Lead**  
**bp**  
**Melbourne, Australia**

Amin Rigi is Data Science Lead at bp, where he spearheads technical data science modeling, fosters stakeholder engagement, and oversees the comprehensive end to end management of data science projects. Backed by a robust foundation in software engineering, a PhD in computer science, and over seven years of industry experience in the realm of data science and delivering quality projects gained from his roles at Aurecon, Vocus, ANZ, and bp, Amin has a noteworthy portfolio of accomplishments. Amin Also loves the meaningful sides of things. In data science, that'd be mostly AI ethics and philosophy.

Speaker V



**Reduan H Khan, PhD**  
**Product Owner Principal and Artificial Intelligence of Things (AIoT)**  
**Telstra, Melbourne, Victoria, Australia**

Speaker VI



**Hany Hossny, PhD**  
**Founder @ DataWorks.ai**  
**Melbourne, Victoria, Australia**

Speaker VII



**Dr Nassim Belbaly**  
**CTO Empathetic AI**  
**GM DragoAI**  
**Melbourne, Australia**

Presentation Title: How Text Generation create value for Cx?

Dr Nassim Aissa Belbaly is the CTO and Co-founder of Empathetic AI, a Generative AI startup that specialize in customer support operations for finance and retail sectors proposing an alternative solution to chatbots and he is also GM of DragoAi a consulting firm on AI. He was Full professor in private and public business schools where he served previously as a Dean of Academic Affairs at Montpellier Business School and Director of Birmingham

City University Business School in charge of the Accreditations, Faculty management and Academic content. He has mainly published in Information system journals and theoretical analysis papers in the field of Technology and Innovation Management.



# Panel Sessions

## Panel on Supply Chain and Logistics

4:00 – 5:45 pm, November 15, 2023 – Room 1 (Onsite)

Panel Chair: **Dr. Gopinath (Gopi) Chattopadhyay**, Federation University Australia, Melbourne, Australia

### Panel Speaker I



**Dr. Marjia Haque**  
**Systems Engineering**  
**Supply Chain Management & Decision Analytics**  
**University of New South Wales**  
**Canberra, Australian Capital Territory, Australia**

**Dr. Marjia Haque** is a passionate academic and researcher in the field of Systems Engineering, Supply Chain Management, Operations Management and Decision Analytics disciplines. She has huge experience in teaching and research in Supply Chain Management areas in Australia and Bangladesh.

### Panel Speaker II



**Ferry Jie, PhD**  
**Associate Professor of Supply Chain and Logistics Management**  
**Edith Cowan University (ECU)**  
**Joondalup, WA 6027, Australia**

Ferry Jie is the Associate Professor in Supply Chain and Logistics Management, in the School of Business and Law. Ferry has graduated his doctorate study from The University of Sydney in 2008. His PhD thesis is Supply Chain Analysis in the Australian Beef Industry. Previously, he was a Senior Lecturer and taking a program coordinator role in Logistics and Supply Chain Management (LSCM) at RMIT University. He was managing and coordinating the undergraduate program in LSCM at RMIT from 2015 to 2016. Associate Professor Ferry Jie has maintained a high quality of research throughout his academic career including international scholarly leadership in the areas of supply chain management and logistics, including being invited to be keynote speaker and to give

public lectures at symposiums and international conferences in Indonesia, Malaysia, Vietnam, China, UK and Australia. From 2015 to now, published more than 60 refereed journal articles—including 28 articles in Q1 and 12 articles in Q2, and 18 refereed conference papers. Furthermore, Dr. Jie has received research grants/awards adding up to over \$1.6 million between 2010 and 2020. Areas of Expertise:

- Supply chain and logistics management including Sustainability Supply Chain Management
- Operations/production management;
- Quantitative management/management science;
- Quality management; Lean Six Sigma;
- Strategic management; and
- Project management

### Panel Speaker III



**Muhammad Shahzeb**  
**MBA-IM (University of Ballarat, Melbourne, Victoria, Australia)**  
**Sr. Lecturer (Operation and Supply Chain Management)**  
**Faculty of Business Management Villa College, Maldives**

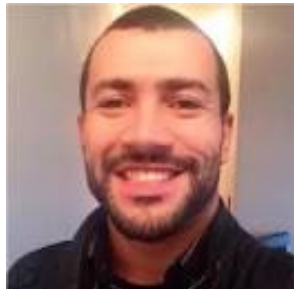
Muhammad Shahzeb Khan is a Senior Lecturer at the Faculty of Business Management at Villa College in Maldives. He holds an MBA in International Management from Federation University Australia. His expertise lies in areas such as operations management, supply chain management, quality lean six sigma, business management, and human resource management (HRM). Shahzeb Khan has accumulated over 13 years of professional experience in various organizations. He has worked at notable companies such as Australia Post, AGL (Australia), and Metro (Germany). In addition to his industry experience, he has also worked at Mohammad Ali Jinnah University in Pakistan. Shahzeb Khan's accomplishments include receiving a travel grant, which he was recognized for his contributions to his field and has been granted funds to support his professional development or research activities. He is also a member of

the Yellow Belt Six Sigma, with familiarity with Six Sigma methodologies and tools for process improvement.

## Panel on Reliability Engineering and Assets Management

4:00 – 5:40 pm, November 16, 2023, Room 1 (onsite)

### Panel Chair:



**Dr. Adriano Gomes de Freitas**  
**Monash University, Melbourne, Australia**

Adriano de Freitas obtained a PhD from the Department of Chemical and Biological Engineering, Monash University, Melbourne, Australia. He also was an Erasmus+ exchange PhD at the Department of Mechanical and Energy Systems Engineering, University of Bradford, Bradford, United Kingdom. He is an Industrial Engineer who has worked with several engineering teams from American, Australian, Brazilian and German companies to make optimization projects that have further developed in order to allow better understanding of the interaction between materials conveyance, operational variables and the relationships through energy efficiency in heavy equipment. He has 10+ years of engineering experience in design, simulations, tests, process and teaching between industry and academia collaborations, solving technical problems with human solutions.

### Panel Speaker I



**Dr. Gopinath (Gopi) Chattopadhyay**  
**Maintenance and Reliability Engineering**  
**Chair of Asset Management Council Australia**  
**Federation University Australia, Melbourne, Australia**

Gopi has extensive experience in the Universities and Industries in asset management, maintenance and reliability engineering, operations management, project management and quality engineering. Before joining Federation University in 2016, he has worked in University of Queensland, Qld University of Technology and Central Qld University in Australia, Indian Institute of Technology, Kharagpur, India, University of Natural Resources and Environment, PNG and Global Consulting Company, Cardno. He has delivered his courses in Australia, Singapore, Indonesia, China, Malaysia and India. Gopi has secured more than 2 million dollars of research and industry funding in asset management, maintenance, reliability, warranty, life cycle cost and risk modelling. In Australia, Rail CRC

and Asset Management CRC along with Qld Rail, QR National, ARTC, QLD Health, Mackay Regional Council, Sun Water, Unity Water, Macquarie Generation, Gladstone Power, in Sweden, Lulea University of Technology along with Swedish Rail and LKAB and in India, Tata Steel and Indian Institute of Technology, Kharagpur funded some of his own and collaborative projects. He has supervised more than 20 higher research degree candidates and published more than 200 high quality scholarly articles in reputed International journals and conferences including one prizewinning best paper in emerald publication. Gopi is actively involved with Asset Management Council (earlier Maintenance Engineering Society of Australia, MESA, professional body and technical society of Engineers Australia). He was industry reviewer of International Standard for Asset Management ISO55000, ISO55001, ISO55002 and Total Asset Management Plan for Queensland Government. He was Vice president of Maintenance Engineering Society (Qld Chapter), President of Australian Society of Operations Research (Qld Chapter) and Chair of Asset Management Council, Brisbane Chapter.

### Panel Speaker II



**Andrew Sarah**  
**Senior Project Manager**  
**Nomad Digital, Melbourne, Australia**

Andrew is a highly respected Engineer, corporate leader, project or program manager, asset manager and innovative business consultant, he takes on new challenges and has a track record of proven success within asset and engineering management, program management, facility management, maintenance, reliability engineering, contract management, team leadership, quality and supply chain logistics. His key attributes include undoubtedly understanding the bigger picture, developing collaborative relationships with stakeholders, ability to apply best practice within a range of Australian and International standards, communicating effectively with key personnel, project managing complex enterprises and creating highly capable independent and motivated teams. Andrew has been involved with the Asset Management Council (AMC) and its predecessor the Maintenance Engineering Society of Australia (MESA) for more than 25 years, including as a committee member, Secretary and is the current Chair of the local Melbourne Chapter, as well as holding national roles with both organisations including Treasurer

and Chair of the Audit and Risk Committee from 2001 until 2019. As a qualified Engineer Andrew combines a wealth of manufacturing, engineering, and rail industry expertise with the capacity to plan, schedule, organise, control, direct and deliver capital works programs, asset management frameworks, Engineering Change Management, lean management, systems engineering management plans, Reliability Centred Maintenance (RCM) and technical maintenance plans. He is currently the Senior Project Manager for Nomad Digital who are completing the delivery of a world first retrofit On-Board Diagnostic system to Metro Trains Melbourne. Andrew leads the Melbourne operations where his team deliver projects and support to the transport sector.

## Panel Speaker III



**Shane Scriven**  
**Managing Director, SAS Asset Management**  
**Melbourne, Victoria, Australia**

Shane is the Founder and Managing Director of SAS Asset Management Pty Ltd and The Maintenance School, organisations devoted to redefining the landscape of Asset Management and Reliability Engineering. Drawing on over a decade of hands-on experience, Shane has pioneered innovative asset management strategies that not only optimise system performance but also focus on a larger mission—making a lasting impact on communities.

Starting as a roving condition monitoring technician, Shane travelled across Australia to support a diverse range of industries. His deep-rooted experience in asset maintenance, reliability engineering, and a variety of sectors including Health Care, Defence Transport, and Manufacturing equips him with a multifaceted understanding of complex system needs. A recipient of 'Project of the Year,' he also honed his skills in management consulting and government contracts during his time at KPMG. SAS Asset Management is committed to delivering bespoke solutions that merge 'better practices' with the unique needs and objectives of each client, coining them as 'best practices for you.' Beyond the bottom line, Shane is also passionate about the societal implications of his work, continually striving for operational efficiencies that are symbiotic with improved quality of life and community well-being. Driven by a lifelong commitment to personal and professional growth, Shane has overcome challenges related to mental health, personal development, and job security. This journey fuels his advocacy for mental health, resilience, and adaptability both within the workplace and in the broader community.

## Panel on Industry 4.0/ Smart city

2:00 – 3:20 pm, November 16, 2023 – Room 1 (Onsite)

## Panel Chair:



**Dr Paulo Vaz Serra, Senior Lecturer**  
**University of Melbourne, Australia**

Dr Paulo Vaz-Serra is a Senior Lecturer in Construction Management at the Faculty of Architecture, Building and Planning at the University of Melbourne since 2014. He is a Civil Engineer and holds a master's degree in Construction and a PhD in Civil Engineering with a focus on knowledge management in construction companies and a postgraduate degree in entrepreneurship and innovation. Recently graduated from the University of Melbourne with a degree in University Teaching (GCUT) he is currently the subject coordinator of several subjects in the Master of Construction Management, and the recent Construction Management Internship. He is a civil engineer with over twenty years of experience working in public and private companies in areas such as civil construction projects, infrastructure and hydraulics and buildings. He also had executive, operational and R&D responsibilities in one of the largest construction companies in Portugal, developing knowledge management systems, identifying the best ways to capture organisations' internal knowledge to improve process efficiency and sharing lessons learned. His research addresses knowledge management in construction, risk management, procurement methods and optimisation and innovation in construction management processes in the Architecture,

Engineering and Construction (AEC) sector. He has several articles published in international academic journals, professional publications, a book on project risk management, book chapters and conference papers. He currently supervises and co-supervises Master and PhD students and works on several research projects with other universities and industry partners. Paulo is a Fellow Engineer and Expert in Construction Management of the Portuguese Order of Engineers (PT), a Chartered Engineer of the Institution of Civil Engineers (ICE-UK), and a Member of the Chartered Institution of Building (CIOB-UK).

## Panel Speaker I



**Dr. Kevin Otto**  
**Professor in Manufacturing & Industrial Systems**  
**Department of Mechanical Engineering**  
**University of Melbourne, Australia**

Dr. Kevin Otto is a Professor in the Manufacturing and Industrial Engineering Group in the Department of Mechanical Engineering at the University of Melbourne. Professor Otto is an expert in design and manufacturing quality improvement and flexible modular design. His research expertise has been in uncertainty quantification and optimization to reduce production variability using both on-line and off-line modeling and experimentation. This includes robust design optimization to ensure confidence levels against probabilistic risk of performance compliance. He has particular interest in model calibration, uncertainty quantification from multiple sources

including test and fabrication, and the study of variability reduction across modular product families. Most recently he has successfully developed new machine learning algorithms to classify patterns in monitored equipment time series data to identify defective parts before they are produced in low pressure die casting foundry operations. In other works, he has developed new Hessian derivative methods to very quickly identify design changes that inherently reduce manufacturing variability.



## Panel Speaker II



**Dr. Matthew Pepper**  
**Associate Professor**

**School of Management, Operations and Marketing**

**University of Wollongong (UOW), New South Wales, Australia**

**Editorial Advisory Boards for the International Journal of Lean Six Sigma, the Journal of Manufacturing Technology Management, and International Journal of Information and Operations Management Education**

Dr Matt pepper is currently a Senior Lecturer within the School of Business, Faculty of Business and Law, at the University of Wollongong Australia. Matt sits on the editorial advisory boards of a number of academic journals, including the Journal of Manufacturing Technology Management, International Journal of Lean Six Sigma and the International Journal of Information and Operations Management Education. Within the faculty of Business and Law, his teaching responsibilities include supply chain management and strategy at both undergraduate and postgraduate levels. Matt's core research interests lie in the application of systems thinking to supply chain disruption, performance management and continuous improvement in the public sector. Most recently, his work has focused on engaging with public sector organizations to develop appropriate performance measurement and management strategies. Matt has currently supervises a number of industry based candidates in these areas of interest and has been an external examiner for a number of PhD theses.

## Panel Speaker III



**Dr Ki Pyung Kim, PhD, PMP, PMI-SP, MCTS**

**Senior Lecturer, Senior Lecturer in the Construction and Project Management**

**UniSA STEM**

**University of South Australia, Australia**

**Visiting Professor, Hanyang University, Korea**

Dr Kim obtained his PhD for research on integrating Building Information Modelling (BIM) into housing refurbishment to determine the most affordable refurbishment solution based on LCC and LCA. His research interests and expertise lie in BIM Systems and applications, Smart City Transition, and Construction Planning/Schedule management. He was awarded 'Best Technical BIM Paper' at the Sustainable Built Environment Conference 2022, 'Best Academic Paper' at the International Conference on Computer and Automation Engineering 2020, 'Highly Commended Academic Paper' at the Pacific Association of Quantity Surveyors Congress 2016, and the 'Best Mention Prize' at the BIM Design competition 2013 hosted by buildingSMART Singapore. He has a very strong track record of funded BIM research: 2017 BIM for Circular Economy (ARUP); 2018 BIM for Smart Construction (Dept of Foreign Affairs & Trade, Australia); 2019 AI-based BIM for Smart Construction (Korean Ministry of Land, Infrastructure & Transport); 2020 BIM/VR integration for Road Safety (SA Government, Australia). Dr Kim also provided consultations on 'BIM-based Building Regulation Check' for the Korea Institute of Civil Engineering and Building Technology, and 'BIM-based Design for Off-site Construction' for the Seoul Housing Corporation Urban Research Centre, Korea.

## **Panel on Women in Industry and Academia (WIIA)**

**4:00 – 5:45 pm, November 16, 2023 – Room 2 (Onsite)**

**Panel Chair:** Associate Professor Jo Staines, Enterprise Fellow, Mechanical Engineering, University of Melbourne, Australia

## Panel Speaker I



**Dr Spring Zhou**

**Faculty of Business and Law**

**School of Business**

**University of Wollongong, NSW, Australia**

**Dr Quan (Spring) Zhou** is a Lecturer in the Operations Discipline Group, School of Management, Operations and Marketing, Faculty of Business, at University of Wollongong. She obtained a PhD in Operations and Supply Chain Management from University of Auckland in 2016 for her research in managing medical supplies in national reserves. Prior to joining University of Wollongong, Spring worked as a lecturer at Massey University (2016-2018) and a Research Fellow at University of Auckland (2016) in New Zealand. Her research interests are in supply chain management, non-profit operations, inventory management of perishable products, and agricultural value chains.

As a strong proponent of practice-inspired research, Spring is passionate about combining her research interests with practical needs. Spring has been actively involved in practice-driven, applied research. For example, her PhD project was motivated by the serious expiration problem in the medical reserve stocks. In that project, she studied rotation schemes and provided suggestions on managing the medical supplies, considering the perishability of long-life medical products. Spring has also worked with *AgResearch* in New Zealand to evaluate on-farm changes when delivering desirable credence attributes for agri-products and explore ways to motivate changes in land use practices.

## Panel Speaker II



**Dr. Hannelie Nel**  
**Regional Quality, Risk and HSE Manager**  
**Worley Middle East-**  
**UAE, Oman, North Africa and Iraq**

Dr Hannelie Nel is the Regional Quality, Risk and HSE Manager for Worley Middle East, including the UAE, Oman, North Africa and Iraq. Worley delivers projects in the energy, chemicals and resources sectors, with a focus on renewable energy and energy transition. In this role, she drives and monitors the effectiveness of quality and risk management within the locations and projects and liaises with location and project management for all assurance aspects of project delivery. She holds a Doctorate in Engineering Management, a Masters in Industrial Engineering, and a Bachelor degree in Chemical Engineering; and is a registered Professional Engineer with 25 years' experience in industry, consulting and academia.

Hannelie is an Industry Advisory Board Member of the American Society for Engineering Management and has served as Past President of the Southern African Institute for Industrial Engineering; currently she is an Honorary Fellow of the Institute. She also serves as an Associate Professor of Practice at the Postgraduate School of

Engineering Management at the University of Johannesburg. She is an international author and speaker with over 90 academic publications and book chapters, and two professional books to date, namely Leadership and Agency by Women Engineers in South Africa and The Development of Women and Young Professionals in STEM Careers, published as co-author. Hannelie has successfully supervised and graduated 60 Masters and 3 Doctoral students in Engineering Management, and her research focuses on Cost of Quality Quality and Risk Management, and Women in Engineering.

During her career, she has received several international awards and nominations for her contribution to the Engineering Industry, to the advancement of women in engineering, and to engineering education. She is an invited member of the International Women's Forum, an invitation-only network of the most accomplished women in the world and in 2022 she received the global IEOM Women in Industry and Academia Lifetime Award for outstanding Leadership in Sydney, Australia.

## Panel Speaker III



**Dr Catherine Lou**  
**Senior Lecturer in supply chain and logistics**  
**Victoria University Business School**  
**Victoria University, Australia**

Dr Catherine Lou is a senior Lecturer in supply chain and logistics at Victoria University Business School. She is the Program research lead in Business at Institute for Sustainable Industries & Liveable Cities, and College of Arts, Business, Law, Education and IT, at Victoria University. She has been leading projects in supply chain management towards sustainability and resilience; social value creation; as well as diversity and inclusion. Catherine recently published a book 'Supply chain management and corporate governance: Artificial intelligence, game theory and robust optimisation', by Routledge (Taylor & Francis). More information can be found through. Catherine is the current Global Vice Chair (Australasia) for Women in Logistics and Transport (WiLAT), Global Head for WiLAT Capacity Building Centre; National Council Member for the Chartered Institute of Logistics and Transport Australia

(CILTA). She is a chartered fellow of CILTA.

## Submissions Received from Countries and Territories

|               |                 |                  |              |
|---------------|-----------------|------------------|--------------|
| 1. Australia  | 11. Indonesia   | 21. New Zealand  | 31. Thailand |
| 2. Bangladesh | 12. Iraq        | 22. Peru         | 32. Ukraine  |
| 3. Brazil     | 13. Iran        | 23. Philippines  | 33. UAE      |
| 4. Canada     | 14. Italy       | 24. Qatar        | 34. USA      |
| 5. Colombia   | 15. Japan       | 25. Saudi Arabia | 35. Vietnam  |
| 6. Costa Rica | 16. Germany     | 26. Singapore    | 36. Zambia   |
| 7. Ecuador    | 17. Malaysia    | 27. South Africa | 37. Zimbabwe |
| 8. Finland    | 18. Mexico      | 28. Sri Lanka    |              |
| 9. India      | 19. Morocco     | 29. Switzerland  |              |
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### Automation and Agility

Dr Santoso Wibowo, Associate Professor, Centre for Intelligent Systems, School of Engineering and Technology, Central Queensland University, Australia.

### Artificial Intelligence for Supply Chain/Automotive Manufacturing Systems

Associate Professor Dr Nagesh Shukla, Department of Business Strategy and Innovation, Griffith Business School, Griffith University, QLD, Australia

### Biotechnology

Dr Suraiya Binte Mostafiz, Senior Research Fellow, School of Bioscience, University Technology Malaysia (UTM), Johor Bahru, Malaysia.

## Business Analytics

Dr Ambika Zutshi, Professor (Management), School of Business, University of Southern Queensland, Australia

## Business Management

Dr Matthew Pepper, Associate Professor, School of Business, Faculty of Business and Law, University of Wollongong NSW 2522, Australia

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Dr Shamsul Huda, Lecturer in Computer Science, Cyber Security Research and Innovation Centre (CSRI), School of Information Technology, Faculty of Science Engineering and Built Environment, Deakin University, Burwood, Victoria, Australia

## Data Analytics / Business Analytics

Dr Sanjoy Paul, Associate Professor, UTS Business School, University of Technology Sydney, Sydney, Australia

## Decision Sciences/Design and Analysis

Dr Spring Zhou, Senior Lecturer, School of Business, Faculty of Business and Law, University of Wollongong, Australia

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Dr Reema Harrison, Associate Professor, Centre for Health Systems and Safety Research, Australian Institute of Health Innovation, Faculty of Medicine, Health and Human Sciences, Macquarie University, NSW 2109, Australia

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Dr. Priyabrata Chowdhury, Lecturer (ECDF) in Supply Chain Management, School of Accounting, Information Systems and Supply Chain, College of Business, RMIT University, Melbourne, Australia

## Inventory Management

Karla Alvarez-Urbe, School of Engineering, Faculty of Sci Eng & Built Env, Deakin University, Melbourne, VIC, Australia

**Lean**

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Dr Wen Li, Senior Lecturer In Manufacturing, Mechanical Engineering, University of Melbourne, Australia

**Project Management**

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**Quality Control and Quality Management**

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Dr Gopinath (Gopi) Chattopadhyay, Maintenance and Reliability Engineering, Federation University Australia, VIC 3841, Australia, Chair of Asset Management Council Australia, Gippsland Chapter.

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Dr. Hasan H. Turan, Lecturer and Research Lead at Capability Systems Centre, University of New South Wales (UNSW Canberra), Australia Sustainability

**Six Sigma**

Dr Roberto Chavez Clavijo, Senior Lecturer, Supply Chain Management, Department of Management and Marketing, Swinburne Business School, Swinburne University of Technology, Victoria, Australia

**Smart Mobility and Smart Cities**

Dr Amany Mohamed Mamdouh AKL, Capability Systems Centre, School of Engineering and IT, University of New South Wales (UNSW), Canberra, Australia

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Dr Samrad Jafarian-Namin, Industrial Engineering Department, Faculty of Engineering, Yazd University, Iran; and Visiting Professor, Faculty of Engineering, University of Mohaghegh Ardabili, Iran.

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- Dr. Robert de Souza, The Logistics Institute – Asia Pacific, Singapore
- Dr. Masine Md. Tap, Universiti Teknologi Malaysia
- Dr. Zulkifli Mohamed Udin, Universiti Utara Malaysia
- Dr. Alok Verma, Old Dominion University, Norfolk, Virginia, USA
- Dr. Hari Agung Yuniarto, Universitas Gadjah Mada, Indonesia
- Dr. Li Zheng, Tsinghua University, China
- Dr. Henk Zijm, University of Twente, Netherlands
- Dr. Ravi Inder S Jassar, Birla Institute of Technology and Sci., Pilani, India

**Program Committee**

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- Dr. Lina Aboueljinane, Industrial Engineering Program, École Nationale Supérieure des Mines de Rabat (ENSMR), Morocco
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- Dr. Syed Ahmad Helmi Al Haddad, Program Coordinator for MSc in Industrial Engineering and Associate Fellow, Center for Engineering Education (CEE), Universiti Teknologi Malaysia, Skudai, Johor, Malaysia
- Dr. Mehmet Savsar, Professor, Department of Industrial and Management Systems Engineering, Kuwait University, Safat, Kuwait
- Dr. Vitor M. Caldana, Professor, Depto. de Eletroeletrônica, IFSP – Instituto Federal de São Paulo – Campus Sorocaba, SP, Brazil
- Dr. Jafri Mohd Rohani, Universiti Teknologi Malaysia
- Dr. Chan Chee-Ming, Associate Professor and Deputy Dean (Academic and Research), Universiti Tun Hussein Onn Malaysia
- Dr. Ilham Kissani, Faculty of Engineering & Management Science, Al Akhawayn University, Ifrane, Morocco
- Dr. Ho Hwi Chie, Bina Nusantara University (Binus), Indonesia
- Dr. Rosemary Seva, De La Salle University – Manila, Philippines
- Dr. Jihong Yan, Professor in Industrial Engineering and Deputy Dean of School of Mechatronics Engineering, Head of intelligent Manufacturing Scientific Research Team, Harbin Institute of Technology, Harbin, China

**Industry Solutions Committee**

- Dr. Zeki Ayağ, Kadir Has University, Turkey
- Amine Belhadi, Industrial Engineering Research Team, Higher School of Technology, Safi, Cadi Ayyad University, Marrakech, Morocco
- Sameh Moh. Nour El-Din A-Razek, Al Ezz Dekheila Steel Co., Alexandria, Egypt



- Abdullah Y Dhafer, Aramco, Saudi Arabia
- Natasha Dzulkarnain, Construction Research Institute of Malaysia
- Dr. Kenichi Funaki, Hitachi, Yokohama, Japan
- Dr. Adel Hejaaji, Engineering Services Management Limited, Essex, UK
- Dr. Anwar Hossain, Daikin Applied, Minneapolis, Minnesota, USA
- Irfasuziella Ibrahim, Construction Research Institute of Malaysia (CREAM)
- Dr. MAS Kamal, Toyota Central R&D Labs. Inc., Nagoya, Aichi, Japan
- Hwa Kooi Kok, Intel Malaysia
- Ali Massaeli, National Iranian Gas Company, Iran
- German Moya, President at IEEE Costa Rica Section, Costa Rica
- Paul Moore, International Mining, England, UK
- Dr. Gerard O'Connor, Adelaide and Meath Hospital, Dublin, Ireland
- Dr. Banu Ozkeser, Istanbul, Turkey
- Dr. Sushil K. Shetty, Wilsonart LLC, Temple, Texas, USA
- Masaru Tezuka, Hitachi Solutions East Japan, Ltd., Japan

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- Resh Plaha, Crystal Quality, UK
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- Dr. Mey Goh, Loughborough University, UK
- Dr. Ilham Kissani, Faculty of Engineering & Management Science, Al Akhawayn University, Ifrane, Morocco
- Dr. Stefanie Pillai, Dean and Associate Professor, Faculty of Languages & Linguistics, University of Malaya, Kuala Lumpur, Malaysia
- Dr. Funda Sivrikaya Şerifoğlu, Bilgi University, Istanbul, Turkey
- Dr. Adibah Shuib, Head of Strategic Planning (Monitoring), Centre for Strategic Planning, Universiti Teknologi MARA (UiTM)
- Dr. Vanajah Siva, Chalmers University, Sweden
- Vanessa Victoire, University of Mauritius
- Prof. Soumaya Yacout, École Polytechnique de Montréal, Canada

#### Technical Committee

- Maram Al-Shammari, Department of Statistics and Operations Research, King Saud University, Riyadh, Saudi Arabia
- Peter M. Tase, IFEEES – GEDC Secretariat
- Dr. A.O. Adewumi, University of KwaZulu-Natal, South Africa
- Dr. Kondo H. Adjallah, Paul-Verlaine University, France
- Dr. Abdollah Aghaie, K.N. Toosi University of Technology, Iran
- Dr. Abdul-Rahman Al-Ali, American University of Sharjah, UAE
- Gasim Al-Hawari, Senior Fleet Management Engineer, Dubai Municipality, UAE
- Ali I. Al-Mosawi, Miskolc University, Hungary
- Dr. Basel Alsayyed, University of Alberta, Edmonton, Canada
- Dr. Kuchkarov Atamurat, Uzbekistan National University, Uzbekistan
- Dr. Faieza Abdul Aziz, Universiti Putra Malaysia, Selangor, Malaysia
- Dr. Amir Azizi, Universiti Malaysia Pahang, Malaysia
- Dr. Bandar A. Alkhayyal, Department of Engineering Management, College of Engineering, Prince Sultan University, Riyadh, Kingdom of Saudi Arabia
- Amine Belhadi, Industrial Engineering Research Team, Higher School of Technology, Safi, Cadi Ayyad University, Marrakech, Morocco
- Dr. Behnam Bahrami, Eastern Mediterranean University, Famagusta, Cyprus
- Dr. D. K. Banwet, IIT-Delhi, India
- Dr. Abdelaziz Berrado, The Ecole Mohammadia d'Ingénieurs, Rabat, Morocco
- Dr. Mahdi Bashiri, Shahed University, Iran
- Dr. Vladimir Beresnev, Sobolev Institute of Mathematics, Russia
- Dr. Haider Ali Biswas, Khulna University, Bangladesh
- Dr. Miguel Sanz Bobi, Comillas Pontifical University, Spain
- Dr. Nejib Chouaibi, Polytechnic School of Tunisia, Tunisia
- Dr. Mohammad Ishak Desa, Universiti Teknologi Malaysia
- Dr. Omar Elmabrouk, Benghazi University, Libya
- Dr. Dinusha Gamage, University of Moratuwa, Sri Lanka
- Dr. Rodrigo Garrido, Universidad Adolfo Ibáñez, Chile
- Dr. Vassilis Gerogiannis, Department of Project Management, Greece
- Dr. Jahara bint Ghani, UKM, Malaysia
- Dr. Ravi Gor, St. Kabir Institute of Professional Studies, Ahmedabad, India
- Dr. Kannan Govindan, University of Southern Denmark, Denmark
- Dr. Md. Mamun Habib, Universiti Utara Malaysia
- Dr. Ramy Harik, University of South Carolina, USA
- Dr. Maruf Hasan, University of New South Wales, Australia
- Dr. Ahmed Kadhim Hussein, Babylon University, Iraq
- Dr. Javad Khamisabadi, Islamic Azad University, Tehran, Iran
- Dr. Raja Kothandaraman, Alpha College of Engineering, Chennai, India
- Dr. Brigitte Jaumard, Concordia University, Canada
- Dr. Rashmi Jha, Gitarattan International Business School (GIBS), Affiliated to Guru Gobind Singh Indraprastha University, New Delhi, India
- Dr. Shahrul B. Kamaruddin, Universiti Sains Malaysia
- Dr. Francis Leung, City University of Hong Kong, China
- Dr. Boudouda Malik, University of Champagne-Ardenne, France
- Dr. Ilias Mamat, Quest International University Perak, Ipoh, Malaysia
- Dr. Fulufhelo Masithulela, University of South Africa
- Dr. Abderrahmane Mellak, University of Bumerdes, Algeria
- Dr. Yuan Xue Ming, SIMTech: Singapore Institute of Manufacturing Technology, Singapore

- Dr. Ruchi Mishra, Institute of Management, Nirma Univ., Ahmedabad, India
- Dr. Vladimir Modrak, TUKE, Slovakia
- Dr. Norhamidi Muhamad, UKM, Malaysia
- Dr. Michael Mutingi, University of Botswana, Botswana
- Dr. Arun N. Nambiar, California State University – Fresno, USA
- Dr. Cecilia Nembou, Divine Word University, Papua New Guinea
- Dr. Sawat Pararach, Thammasat University, Thailand
- Dr. Eui H. Park, North Carolina A&T State University, USA
- Dr. Md. Mizanur Rahman, Universiti Malaysia Sabah (UMS), Kota Kinabalu, Sabah, Malaysia
- Dr. T. Ramayah, School of Management, Universiti Sains Malaysia
- Dr. Raja Zuraidah Raja Mohd Rasi, Universiti Tun Hussein Onn Malaysia
- Dr. Bhuvanesh Rajamony, University Malaysia Perlis (UniMAP), Malaysia
- Dr. Mohd Abdur Rashid, University Malaysia Perlis (UniMAP), Malaysia
- Dr. Syed Asif Raza, Qatar University, Qatar
- Dr. Nubia Milena Velasco Rodriguez, Universidad de Los Andes, Colombia
- Dr. P. Sanjeevikumar, Dublin Institute of Technology, Ireland
- Dr. Mahmood Shafiee, Cranfield University, Bedfordshire, United Kingdom
- Dr. Ahm Shamsuzzoha, University of Vaasa, Finland
- Dr. Abdussalam Shibani, Coventry University, UK
- Dr. Sarbjit Singh, National Institute of Technology, Jalandhar, Punjab, India
- Dr. Shahryar Sorooshian, University of Gothenburg, Sweden
- Dr. Jayakanth Srinivasan, MIT Sloan School of Management
- Dr. Gopalan Srinivasan, University of New Brunswick, Canada
- Dr. Zuraidah Sulaiman, Universiti Teknologi Malaysia
- Dr. Balan Sundarakani, University of Wollongong in Dubai, UAE
- Laurent Tchommo, Operations Management, Department of CIS & BSAN, College of Business, James Madison University, VA, USA
- Dr. Murat Caner Testik, Hacettepe University, Ankara, Turkey
- Dr. Theodore B. Trafalis, University of Oklahoma, USA
- Dr. Vladimir I. Tsurkov, Russian Academy of Sciences, Moscow, Russia
- Dr. Hui-Ming Wee, Chung Yuan Christian University, Taiwan
- Dr. Yong Yin, Yamagata University, Japan
- Dr. Norzaidahwati Zaidin, Universiti Teknologi Malaysia, Johor, Malaysia
- Dr. Suhaiza Hanim Zailani, University Malaya, Malaysia
- Dr. Linda L. Zhang, IESEG School of Management, Lille-Paris, France
- Dr. Ali Mostafaeipour, Associate Professor, Industrial Engineering Department, Yazd University, Yazd, Iran

# Parallel Sessions

All Times are in Melbourne Time (AEDT)

## Tuesday, November 14, 2023

|          | Onsite Room 1   | Onsite Room 2  | Onsite Room 3                   | Virtual Room 4                                 |
|----------|---|--|---------------------------------|--|
| 8:00 am  | Plenary: Global Engineering Education   | Undergraduate Student Paper /research/SCL/Doc/graduate research competitions | Artificial Intelligence         | Undergraduate Student Paper Competition        |
| 10:00 am | Welcome Address: Conference Chair - Dr Felix Kin Peng Hui, Associate Professor, University of Melbourne, Australia  |  |                                 |  |
| 10:20 am | Keynote I: David Aaron Karr, CPEng, FIEEA President, Industrial Engineers Australia (IEA), Australia  |  |                                 |  |
| 11:00 am | Keynote II: Prof Daniel Samson, Chair in Management, Department of Management and Marketing, University of Melbourne, Melbourne, Australia  |  |                                 |  |
| 11:40 am | Keynote III: Professor Peter Galvin, PhD, Associate Dean, Research, School of Business and Law, Edith Cowan University, WA, Australia   |  |                                 |  |
| 12:20 pm | Keynote IV: Prof. (Em.) Raphael Grzebieta AM, Emeritus Professor (Road Safety), Transport and Road Safety (TARS) Research, School of Aviation, University of New South Wales, Sydney, Australia |  |                                 |  |
| 1:00 pm  | Onsite Lunch Break  |  |                                 |  |
| 2:00 pm  | Business Management   | Energy/ Engineering Management   | Decision Sciences               | Graduate Student Paper Competition             |
| 4:00 pm  | Plenary: Global Lean Six Sigma  | Industry 4.0   | Entrepreneurship and Innovation | Operations Management                          |
| 6:00pm   |   |  |                                 | LSS/simulation competitions                    |
| 8:00pm   |   |  |                                 | High School and Middle School STEM Competition |

## Wednesday, November 15, 2023

|          | Onsite Room 1   | Onsite Room 2   | Onsite Room 3                  | Virtual Room 4                          |
|----------|---|---|--------------------------------|---|
| 8:00 am  | Plenary: Global Business Management   | Manufacturing   | Maintenance and Reliability    | Undergraduate Research Competition      |
| 10:00 am | Student Chapter Presentations   |   |                                |   |
| 10:20 am | Keynote V: Paul Childerhouse, PhD, Professor and Head of Department, Logistics and Supply Chain Management, RMIT University, Melbourne, Victoria, Australia   |   |                                |   |
| 11:00 am | Keynote VI: Professor Charles Mbohwa, Ph.D., Visiting Professor, University of Johannesburg, South Africa   |   |                                |   |
| 11:40 am | Keynote VII: Prof. Sardar M. N. Islam (Naz), Ph. D., LL. B. (Law), Professor, ISILC, Victoria University, Melbourne, Australia, Distinguished Visiting Professor of Artificial Intelligence, UnSri, Adjunct Professor of IT and Business, Armstrong Institute, Melbourne, Editor-in-Chief: IAIC Transactions on Artificial Intelligence |   |                                |   |
| 12:20 pm | Keynote VIII: Dr Md Abdus Samad Kamal, Graduate School of Science and Technology, Gunma University, Kiryu, Japan  |   |                                |   |
| 1:00 pm  | Onsite Lunch Break  |   |                                |   |
| 2:00 pm  | Plenary: Global Supply Chain and Logistics  | Lab Visits<br>Telstra Creator Space Lab<br>Science Gallery<br>Digital Lab<br>Sustainability Lab | Operations Management          | Business Management                     |
| 4:00 pm  | Panel: Supply Chain and Logistics   |   | Energy/ Engineering Management | Healthcare Systems/ Service engineering |
| 6:00 pm  |   |   |                                | Sustainability and Green Systems        |

## Thursday, November 16, 2023

|   | Onsite Room 1   | Onsite Room 2                         | Onsite Room 3                                  | Virtual Room 4                             |
|---|---|---------------------------------------|--|--|
| 8:00 am                                     | Plenary: Industry Solutions and Industry 4.0  | Supply Chain Management               | Artificial Intelligence/Digital transformation | Engineering Management/ Project Management |
| 10:00 am                                    | Welcome   |                                       |  |  |
| 10:20 am                                    | Keynote IX: Dr Peter Robertson, Honorary Research Fellow, University of Wollongong (UOW), Australia and Leadership in various industries in Australia   |                                       |  |  |
| 11:00 am                                    | Keynote X: Prof Lihai Zhang, PhD, M.Eng, CPEng, NPER, FIEAus, Professor of Infrastructure Protection & Management, Discipline Leader of the Engineering Management group, University of Melbourne, Melbourne, Australia |                                       |  |  |
| 11:40 am                                    | Keynote XI: Dr Indra Gunawan, Associate Professor, Adelaide Business School, Faculty of Arts, Business, Law and Economics, University of Adelaide, Australia  |                                       |  |  |
| 12:20 pm                                    | Keynote XII: Professor Rahmat Nurcahyo, PhD, Industrial Engineering Department, Universitas Indonesia (UI), Jakarta, Indonesia  |                                       |  |  |
| 1:00 pm                                     | Onsite Lunch Break  |                                       |  |  |
| 2:00 pm                                     | Panel Industry 4.0/ Smart City  | Sustainability in Supply Chain        | Plenary: Global Artificial Intelligence and ML | Lean Six Sigma                             |
| 3:20 pm                                     | Keynote XIII: John Blakemore, PhD, CEO, Blakemore Consulting International, Adjunct Professor, University of Newcastle, Newcastle, NSW, AUSTRALIA   |                                       |  |  |
| 4:00 pm                                     | Panel: Reliability Engineering and Assets Management  | Panel: Women in Industry and Academia | Decision Science                               | Production Engineering                     |
| 7:00 – 10:00 pm, Conference Awards Ceremony |   |                                       |  |  |

# November 14, 2023 (Tuesday)

**8:00 – 9:45 am, November 14 (Tuesday)**

**Global Engineering Education**

**Onsite Room 1**

**Session Chair:** Dr. Nilupa Herath, Lecturer, Department of Infrastructure Engineering, University of Melbourne

**Speaker I:**

Jan Harm Christiaan Pretorius  
Professor Postgraduate School of Engineering Management  
University of Johannesburg, South Africa

**Speaker II:**

Prof Lu Aye, PhD  
Department of Infrastructure Engineering  
University of Melbourne, Australia

**Speaker III:**

Dr. Nilupa Herath  
Lecturer, Department of Infrastructure  
Engineering  
University of Melbourne  
Australia

**Speaker IV:**

Professor Akhtar Kalam  
Leader – Smart Energy Research Unit  
College of Sport, Health and Engineering  
Victoria University  
Victoria, Australia

**8:00 – 9:45 am, November 14 (Tuesday)**

**Competitions**

**Onsite Room 2**

**Session Chair:** Dr Roberto Chavez Clavijo, Senior Lecturer, Supply Chain Management, Department of Management and Marketing, Swinburne Business School, Swinburne University of Technology, Victoria, Australia

**Undergraduate Student paper**

**ID 74 Lack of Downstream Processing in the Agriculture Sector in Papua New Guinea**

Sandy Stephen and Stephanie Laki, Department of Mechanical Engineering, Papua New Guinea University of Technology, Lae, MP411, Papua New Guinea

**ID 225 Exploiting Raspberry Pi Clusters and Campus Lab Computers for Distributed Computing**

Jai Bhortake, VJTI, India

**ID 269 Rauvolfia Serpentina (Serpentina) And Peperomia Pellucida (Pansit-Pansitan) As An Antiparasitic Spray Against Rhipicephalus Sanguineus Latreille**

Mahmooda Aziza Bhatti, Bulacan State University, Philippines

**ID 32 Characterization of Cellulase, Hemicellulase, Lignocellulose Degrading Fungi, and Bacteria from Oil Palm Co-Composting Process of Empty Fruit Bunches, Palm Oil Mill Effluent, and Boiler Ash**

Jajang Supriatna, Agricultural Science, Faculty of Agriculture, Padjadjaran University, Bandung 45363, Indonesia.

ANJ Research Center, PT. Austindo Nusantara Jaya Tbk., Belitung 33561, Indonesia

Mieke Rochimi Setiawati and Rija Sudirja, Soil Science, Faculty of Agriculture, Padjadjaran University, Bandung 45363, Indonesia

Cucu Suherman, Agronomy Department, Faculty of Agriculture, Padjadjaran University, Bandung 45363, Indonesia

Xavier Bonnaeu, Perennial Crops Department, AbSys Research Unit, Centre de Coopération Internationale en Recherche Agronomique pour le Développement, Montpellier 34398 Cedex 5, France

**Undergraduate Research paper**

**ID 11 A Cross-Sectional Study on Anger Expression Among Students in University of Cyberjaya, Malaysia**

Nur Aimi Nadiyah Binti Rosdan, Student, School of Medicine, University of Cyberjaya (UoC), Cyberjaya, Malaysia

Kirsharupini Gopalakrishnan, Abu Huzaifah Bin Muhamad Sharman, Kenny Anak Paschal and Dr. Muhammad Radhi Ahmad, School of Medicine University of Cyberjaya (UoC), Cyberjaya, Malaysia

**Supply Chain and Logistics competition**

**ID 31 Pharmaceutical Manufacturing Industry Performance in Supply Chain Management through Efficiency on Supply Chain Process**

Muhammad Shahzeb Khan, Senior Lecturer, Faculty of Business Management, Villa College, Maldives

Muhammad Faisal, Mohammad Ali Jinnah University, Karachi, Pakistan

Dr. Ahsan Jaleel, Faculty of Business Management

**8:00 – 9:45 am, November 14 (Tuesday)**

**Competitions**

**Onsite Room 3**

**Session Chair:** Dr. Md Abdus Samad Kamal, Graduate School of Science and Technology, Gunma University, Kiryu, Japan



## Technical Paper

### **ID 220 Driving Forces Shaping the Future of Urban Logistics: Insights from a Foresight Exercise in Singapore**

Ei Myat Kay Khine, Centre for Applied Research, Singapore University of Social Sciences, Singapore  
Seyed Mehdi Zahraei, School of Business, Singapore University of Social Sciences, Singapore  
Sougotam Ghosh, School of Business, Singapore University of Social Sciences, Singapore

## Master Thesis competition

### **ID 232 Current Advances in Heat Loss Modelling of Industrial Boilers**

Khethukuthula Modiba and Daramy Vandi Von Kallon, Department of Mechanical and Industrial Engineering Technology, University of Johannesburg, South Africa

## Graduate Student paper competition

### **ID 84 Medical Device Failures Analysis: Engineering Management Perspectives**

Limpat Salamat, Engineering Management, Faculty of Engineering and IT, University of Melbourne, Melbourne, Australia

## Doctoral Dissertation competition

### **ID 183 Energy Efficiency of an Innovative Solids Feeder for Dense Phase Pneumatic Conveying Systems**

Adriano Gomes de Freitas, Industrial Academic Doctorate (DAI), Federal University of ABC (UFABC), Brazil  
Ricardo Borges dos Santos, Zeppelin Systems GmbH, Graf-Zeppelin-Platz 1, 88045 Friedrichshafen, Germany  
Luis Alberto Martinez Riascos, Energy Postgraduate Program, Federal University of ABC (UFABC), Brazil  
Jose Eduardo Munive-Hernandez, Faculty of Engineering and Informatics, University of Bradford, West Yorkshire, United Kingdom  
Shibo Kuang and Ruiping Zou, Laboratory for Simulation and Modelling of Particulate Systems (SIMPAS), Monash University, Australia  
Aibing Yu, Laboratory for Simulation and Modelling of Particulate Systems (SIMPAS), Monash University, Australia

## Graduate poster

### **ID 270 Navigating the Ethical Maze: Balancing Digital Resilience and Ethical Imperatives for Sustainable Business Practices in the Digital Age: A Multidimensional Framework**

G.G. Udaya Priyasantha Rathnayake, University of Wollongong, Australia

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## **8:00 – 9:45 am, November 14 (Tuesday) Undergraduate Student Paper Competition Virtual Room 4**

Session Chair: Associate Professor Dr Ferry Jie, School of Business and Law, Edith Cowan University, Western Australia, Australia

### **ID 69 Improvement Proposal to Achieve Shrinkage Reduction in Home Dispatch Process in Retail Company**

Alison Pimentel Piscocoy, Katherine Hidalgo Reyna and Ezilda Cabrera Gil Grados, Facultad de Ingeniería, Universidad de Lima, Perú

### **ID 88 Downstream Processing in Forestry and Timbers in Papua New Guinean**

Peter Ava, Liz Jonah, Samuel Talpa and Duke Francis Warai, Department of Mechanical Engineering, Papua New Guinea University of Technology  
Lae, MP411, Papua New Guinea

### **ID 90 Enhancing Lean Implementation in SMEs: Exploring Barriers and HRM Strategies**

Diego Adrian Gerboline-Pastor, Faculty of Engineering, University of Lima, Lima, Perú  
Rafael Chavez-Ugaz, Research Professor, Faculty of Engineering, University of Lima

### **ID 91 Enhancing Lean Implementation in SMEs: Exploring Barriers and HRM Strategies**

Diego Adrian Gerboline Pastor, Universidad de Lima, Peru

### **ID 142 Systemic View to A Smart Sprinkler System for Effective Utilization of Water - A Case study of UAE**

Mahra Alameri, Maitha Alawadhi, Maryam Almutawa, Nada Aljaberi and Sara Alamodi, Industrial Engineering Department, Faculty of Engineering, Higher College of Technology, Abu Dhabi, UAE

### **ID 191 Assessing the Factors Influencing Productivity in Steel Manufacturing Industries**

Mariam Alzaabi and Noura Alhammadi, Bachelor Student, Department of Industrial Engineering Technology, Higher Colleges of Technology, Abu Dhabi, United Arab Emirates  
Sasikumar Perumal, Faculty, Department of Industrial Engineering Technology, Higher Colleges of Technology, Abu Dhabi, United Arab Emirates

### **ID 216 Investment Cost Analysis and Quality Control of Telco Products at PT XYZ using FMEA Method and Kaizen Approach**

Alya Ramadhani, Undergraduate Program in Industrial Engineering Department, Faculty of Engineering, Universitas Sebelas Maret Surakarta, Jl. Ir. Sutami, 36 A, Surakarta, Indonesia  
Wahyudi Sutopo, University Centre of Excellence for Electrical Energy Storage Technology, Department, Faculty of Engineering, Research Group Industrial Engineering and Techno-Economic, Industrial Engineering Department, Faculty of Engineering, Universitas Sebelas Maret, Surakarta, Jl. Ir. Sutami, 36 A, Surakarta, Indonesia

### **ID 233 Fertilizer Storage Cost Optimization on First Lean Warehouse of PT XYZ with Net Present Value and Equivalent Uniform Annual of Cost Method**

Ervizal Buana Jatiputra, Undergraduate Student, Faculty of Engineering, Universitas Sebelas Maret (UNS), Surakarta, Indonesia  
Wahyudi Sutopo, Industrial Engineering Department, Faculty of Engineering, Universitas Sebelas Maret (UNS), Surakarta, Indonesia

### **ID 237 The compartmentalized knapsack problem applied to the financial market**

**ID 133 Designing an Integrated Supply Chain for Biodiesel Production in the UAE**

Afra Najeeb Safar, Fatima Ghubar Alshamsi, Mouza Ojail Alketbi, Nada Abdulhakeem Bushlaibi and Safeya Saeed AlMaazmi, Industrial Engineering Technology Department, Higher Colleges of Technology, UAE  
Yousef Abu Nahleh, Assistant Professors, Industrial Engineering Technology Department, Higher Colleges of Technology, UAE

**ID 289 Improving Pallet Control in Mass Consumption Companies: A Proposal for Layout Optimization**

Leonardo Sebastian Carranza-Quijaite and Silvana Paola Chirinos-Ayala, Facultad de Ingeniería, Carrera de Ingeniería Industrial, Universidad de Lima, Perú  
Juan Carlos Quiroz-Flores, Research Professor, Facultad de Ingeniería, Carrera de Ingeniería Industrial, Universidad de Lima, Perú

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**November 14 (Tuesday), 10:00 am**

**Keynotes**

**Onsite Room 1**

**10:00 am Welcome Address:** Dr Felix Kin Peng Hui, Conference Chair, Department of Infrastructure Engineering, University of Melbourne, Australia

**Keynote Host:** Dr Mohsin Malik, Associate Professor & Director – Master of Project Management, Swinburn Business School, Swinburn University of Technology, Melbourne, Australia

**10:20 am Keynote I:** David Aaron Karr, CPEng, FIEEA President, Industrial Engineers Australia (IEA), Australia

**11:00 am Keynote II:** Prof Daniel Samson, Chair in Management, Department of Management and Marketing, University of Melbourne, Melbourne, Australia

**11:40 am Keynote III:** Professor Peter Galvin, PhD, Associate Dean, Research, School of Business and Law, Edith Cowan University, WA, Australia

**12:20 pm Keynote IV:** Prof. (Em.) Raphael Grzebieta AM, Emeritus Professor (Road Safety), Transport and Road Safety (TARS) Research, School of Aviation, University of New South Wales, Sydney, Australia

**1:00 – 2:00 pm Lunch break**

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**2:00 – 3:45 pm, November 14 (Tuesday)**

**Business Management**

**Onsite Room 1**

Session Chair: Dr Sanjoy Kumar Paul, Associate Professor, UTS Business School, University of Technology Sydney, Sydney, Australia

**ID 5 Assessing the Empowerment Program at a South African University**

Sambil Charles Mukwakungu, Sandy Ndlovu, Nita Sukdeo and Charles Mbohwa, Department of Quality and Operations Management, University of Johannesburg, Johannesburg, South Africa

**ID 6 The Management of Change and Organizational Culture within the Media Industry in South Africa**

Sambil Charles Mukwakungu, Portia Makamu, Nita Sukdeo and Charles Mbohwa, Department of Quality and Operations Management, University of Johannesburg, Johannesburg, South Africa

**ID 8 Examining the Relationship Between Service Quality and Customer Satisfaction in the Banking Sector – Case of Student Customers in Johannesburg, South Africa**

Sambil Charles Mukwakungu and Charles Mbohwa, Department of Quality and Operations Management, University of Johannesburg, Johannesburg, South Africa

**ID 13 Moderate role of culture distance on the relationship between Business intelligence and speed of internationalization. Mediating effect of organizational agility, innovation capabilities, UAE**

Samer Al-shami, Universiti Tekinal Malaysia Melaka, Malaysia

**ID 43 Do the Descriptions in the MD&A Section Contribute as a Red Flag for the Early Detection of Fraudulent Accounting Firms in Japan?**

Keisuke Miyago, Natsuki Sato, Ayuko Komura and Hirohisa Hirai, Department of Industrial Engineering and Management, Kanagawa University, Kanagawa, Japan

**ID 44 Relationship between textual characteristics of MD&A Sections in English Annual Securities Reports of Japanese Companies and Future ROE**

Ran Murakami, Takaaki Kawabe, Ayuko Komura and Hirohisa Hirai, Department of Industrial Engineering and Management, Kanagawa University Kanagawa, Japan

**ID 45 Do male and female investors use different information when assessing stock valuation and trustworthiness?**

Kaori Ojima, Ayuko Komura and Hirohisa Hirai, Department of Industrial Engineering and Management, Kanagawa University, Kanagawa, Japan

**ID 46 Analysis of Determinants of Regional Attractiveness in the “Regional Brand Survey”**

Ramon Imaizumi, Ayuko Komura and Hirohisa Hirai, Department of Industrial Engineering and Management, Kanagawa University, Kanagawa, Japan

**ID 47 The Relationship between managers Vocal Characteristics in net Conferences and Performance**

Hikaru Kanda, Takaaki Kawabe, Ayuko Komura and Hirohisa Hirai, Department of Industrial Engineering and Management, Kanagawa University Kanagawa, Japan

**ID 70 A Study of Investment Catalysts: Unraveling Determinants of Fixed Assets in the Construction Industry**

S. L. Tulasi Devi, Associate Professor, School of Management, National Institute of Technology, Warangal (NITW), India

**2:00 – 3:45 pm, November 14 (Tuesday)**

**Energy/ Engineering Management**

**Onsite Room 2**

Session Chair: Dr Paulo Vaz Serra, Senior Lecturer in Construction Management at the Faculty of Architecture, Building and Planning at the University of Melbourne, Australia

**ID 221 Designing sustainable energy efficient buildings through passive strategies**

Mehdi Gholami Rostam, PhD student, School of Engineering and Information Technology, University of New South Wales (UNSW), Australia  
Dr. Alireza Abbasi, Senior Lecturer, School of Engineering and Information Technology, University of New South Wales (UNSW), Australia

**ID 106 Understanding Structural Integrity: Defining the Key Factors for Concrete Building Stability in the Wake of Seismic Waves**

Mohanad Akeila, Faculty of Engineering, Computing and Science, Swinburne University of Technology, United Arab Emirates  
Hibatullah Al Kurdi, Faculty of Business and Law, Angelina Ruskin University

**ID 241 GEOTHERMAL ENERGY RESOURCES, EXPLOITATIONS AND APPLICATIONS**

Moses Jeremiah Barasa Kabeyi, Industrial Engineering Department, Durban University of Technology, Durban South Africa  
Oludolapo Akanni. Olanrewaju, Industrial Engineering Department, Durban University of Technology, Durban South Africa

**ID 243 Nuclear Power in the Sustainable Energy Transition**

Moses Jeremiah Barasa Kabeyi, Industrial Engineering Department, Durban University of Technology, Durban South Africa  
Oludolapo Akanni. Olanrewaju, Industrial Engineering Department, Durban University of Technology, Durban South Africa

**ID 244 Solar Energy as a Sustainable Energy for Power Generation**

Moses Jeremiah Barasa Kabeyi, Industrial Engineering Department, Durban University of Technology, Durban South Africa  
Oludolapo Akanni. Olanrewaju, Industrial Engineering Department, Durban University of Technology, Durban South Africa

**ID 245 The Load Curve and Load Duration Curves in Generation Planning**

Moses Jeremiah Barasa Kabeyi, Industrial Engineering Department, Durban University of Technology, Durban South Africa  
Oludolapo Akanni. Olanrewaju, Industrial Engineering Department, Durban University of Technology, Durban South Africa

**ID 246 Wind Energy in Sustainable Power Generation and Supply**

Moses Jeremiah Barasa Kabeyi, Industrial Engineering Department, Durban University of Technology, Durban South Africa  
Oludolapo Akanni. Olanrewaju, Industrial Engineering Department, Durban University of Technology, Durban South Africa

**2:00 – 3:45 pm, November 14 (Tuesday)**

**Decision Sciences**

**Onsite Room 3**

Session Chair: Dr Imran Ali, Senior Lecturer in Operations and Innovation Management, School of Business and Law, Central Queensland University (CQU), Melbourne, VIC 3000, Australia

**ID 105 Streamlining Inventory Management and Warehousing - An Action Research Case Study of Multiple Mass Rapid Transit (MRT) Upgrading Projects in Singapore**

Chee Wai Meng and Tan Jing Han, School of Business, Logistics and Supply Chain Management Programme, Singapore University of Social Sciences, Singapore

**ID 96 Key Factors That Lead to Late Completion of Government Funded Construction Projects in South Africa**

Simangaliso Hlengwa, Postgraduate School of Engineering Management, University of Johannesburg, Johannesburg, South Africa  
Hannelie Nel, Postgraduate School of Engineering Management, University of Johannesburg, Johannesburg, South Africa

**ID 59 Barriers to Creativity in Distributed Product Development**

Annika Bastian, Yaser Kassem, Christoph Kempf and Albert Albers, IEPK - Institute of Product Engineering, Karlsruhe Institute of Technology (KIT) Karlsruhe, Germany

**ID 71 Topology Optimization of the Bell Crank Lever**

R. Narasimha Rao, Professor, Department of Mechanical Engineering, National Institute of Technology Warangal, Warangal, Telangana, India  
Ch. Sri Chaitanya, Asst. Professor, Department of Mechanical Engineering, Velagapudi Ramakrishna Siddhartha Engineering College, Kanuru Vijayawada, Andhra Pradesh, India

**ID 17 Design and Implementation of a Micro-controller Based Intelligent Power and Transmission Failure Detection Methodology in 5G Telecommunication Networks**

Malebo L. G Maboko, M.Sc (Eng) Student, School of Mechanical, Industrial and Aeronautical Engineering, University of the Witwatersrand (Wits), Johannesburg, South Africa  
Mncedisi Dewa, Ph.D., Senior Lecturer, School of Mechanical, Industrial and Aeronautical Engineering, University of the Witwatersrand (Wits) Johannesburg, South Africa

**2:00 – 3:45 pm, November 14 (Tuesday)**

**Graduate Student Paper Competition**

**Virtual Room 4**

Session Chair: Professor Ambika Zutshi, Professor (Management), School of Business, University of Southern Queensland, Australia

**ID 124 Improvement Proposal Applied in A MSE in the Textile and Clothing Sector: Case Study in a Baby Clothing Company**

Ana Fernanda Ramirez-Milla, Facultad de Ingeniería, Universidad de Lima, Lima, Perú  
Rafael Chavez-Ugaz, Facultad de Ingeniería, Universidad de Lima, Lima, Perú

**ID 128 Statistical Analysis of Welding Parameters Affecting the Tensile Strength of Mild Steel Plates**

Ninad Joshi and Pawan Bhandari, Ph.D., Department of Automotive and Manufacturing Engineering Technology, Minnesota State University



**ID 129 Determining the Factors Responsible for Affecting Impact Strength of a Carbon Fibre 3-D Printed Specimen Using Design of Experiments**

Shubham Parekh and Pawan Bhandari, Ph.D., Department of Automotive & Manufacturing Engineering Technology, Minnesota State University  
Mankato, MN 56001, USA  
Praneel Acharya, Ph.D., Department of Mechanical Engineering, Minnesota State University, Mankato, MN 56001, USA

**ID 143 Feasibility of lean manufacturing kaizen teams' approach to help the plastic manufacturing industry with continuous improvement**

Judith Nkuna, Department of Quality and Operations Management, Department of Engineering Management, University of Johannesburg South Africa  
Andre Vermeulen, Post Graduate School Engineering Management, University of Johannesburg, Auckland Park, Johannesburg, Gauteng, South Africa  
Jan-Harm C. Pretorius, Post Graduate School Engineering Management, University of Johannesburg, Auckland Park, Johannesburg, Gauteng, South Africa

**ID 217 Principles of lean manufacturing techniques to bring continuous improvement in the plastic industry**

Judith Nkuna, Department of Quality and Operations Management, Department of Engineering Management, University of Johannesburg South Africa  
Andre Vermeulen, Post Graduate School Engineering Management, University of Johannesburg, Auckland Park, Johannesburg, Gauteng, South Africa  
Jan-Harm C. Pretorius, Post Graduate School Engineering Management, University of Johannesburg, Auckland Park, Johannesburg, Gauteng, South Africa

**ID 248 Optimal Driving Strategy at Signalized Intersections for Improving Traffic Flow and Congestion Mitigation**

Kenta Nakakura, Magzhan Atykhan, Md Abdus Samad Kamal and Kou Yamada, Graduate School of Science and Technology  
Gunma University, Gunma, Japan

**ID 261 The Influence of Good Corporate Governance (GCG) Policies and Business Ethics on the Implementation of GCG**

Adinda Lestari Siregar, Faculty of Economics and Business, Sumatera Utara University - Medan, Indonesia  
Ridhani Fahlika Siregar, Faculty of Economics and Business, Sumatera Utara University - Medan, Indonesia  
Rina BR Bukit, Faculty of Economics and Business, Sumatera Utara University - Medan, Indonesia

**ID 273 Design and Operation of a GPT-powered Smart Manufacturing System**

Yiyun Fei, Shu Wang and Mulang Song, School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA  
Jianxin (Roger) Jiao, Associate Professor of Mechanical Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA

**4:00 – 5:45 pm, November 14 (Tuesday)**

**Plenary: Global Lean Six Sigma**

**Onsite Room 1**

Session Chair: Dr Seyed Mojib Zahraee

**Speaker I:**

Theo Goutzioulis  
Senior Process Transformation Lead / Scrum Lead / Product Owner  
Telstra, Melbourne, Victoria, Australia

**Speaker II:**

Dr. Guilherme Tortorella  
Senior Lecturer  
University of Melbourne  
Parkville, Victoria, Australia

**Speaker III:**

Dr Seyed Mojib Zahraee  
Research Assistant  
RMIT School of Engineering  
RMIT University  
Melbourne, Australia

**Speaker IV:**

Dr. Ahad Ali  
Associate Professor  
Director of Bachelor of Science in Industrial Engineering  
Director, Master of Science in Industrial Engineering  
Director of Smart Manufacturing and Lean Systems Research Group  
A. Leon Linton Department of Mechanical, Robotics and Industrial Engineering  
Lawrence Technological University, Southfield, Michigan, USA  
Executive Director, IEOM Society International

**4:00 – 5:45 pm, November 14 (Tuesday)**

**Industry 4.0**

**Onsite Room 2**

Session Chair: Dr Sanjoy Kumar Paul, Associate Professor, UTS Business School, University of Technology Sydney, Sydney, Australia

**ID 126 Realizing Electrical Digital Twin (EDT) via Intelligent Substation (IS)**

Ir. Ts. Noor Mohd Fadzli B Othman, Engineering Department, PETRONAS Group Technical Solutions (GTS), Kuala Lumpur, Malaysia  
Ir. Ts. M Nazim B Hamid, Engineering Department, PETRONAS Group Technical Solutions (GTS), Kuala Lumpur, Malaysia  
Ir. Salmey B A Halim, Engineering Department, PETRONAS Group Technical Solutions (GTS), Kuala Lumpur, Malaysia  
Noor Ekhsan B M Isnain, Engineering Department, PETRONAS Group Technical Solutions (GTS), Kuala Lumpur, Malaysia

**ID 117 Evaluating Applications of IoT and its Potential in South Africa's Agricultural Sector**

Vuyokazi Mbele and Jan Harm C Pretorius, Postgraduate School of Engineering Management Faculty of Engineering and the Built Environment University of Johannesburg, South Africa

**ID 99 Implementation of 5S and its Impact: A University Case Study**

RD Mukoma, Department of Mechanical and Industrial Engineering Technology, University of Johannesburg, Johannesburg, South Africa  
Kapil Gupta, Department of Mechanical and Industrial Engineering Technology, University of Johannesburg, Johannesburg, South Africa  
Sujeet Kumar Chaubey, Department of Mechanical and Industrial Engineering Technology, University of Johannesburg, Johannesburg, South Africa

**ID 82 Corporate Credit Rating Estimation Using Stacking with Base Models Based on Groups of Classified Features**

Sho Sato, Department of Industrial Engineering and Management, Graduate School of Engineering, Kanagawa University, Kanagawa, Japan  
Hideki Katagiri, Department of Industrial Engineering and Management, Faculty of Engineering, Kanagawa University, Kanagawa, Japan  
Masanobu Matsumaru, Research Institute for Engineering, Kanagawa University, Kanagawa, Japan

**ID 63 A Leagile Supply Chain Model for the Effective Mitigation of Sudden Risks**

Towfique Rahman, UTS Business School, University of Technology Sydney, Sydney, Australia  
Sanjoy Kumar Paul, UTS Business School, University of Technology Sydney, Sydney, Australia

**4:00 – 5:45 pm, November 14 (Tuesday)****Entrepreneurship and Innovation****Onsite Room 3**

Session Chair: Associate Prof. Dr. Matthew Pepper, School of Business, Faculty of Business and Law, University of Wollongong NSW 2522 Australia

**ID 77 Analysis of the Integration of Monitoring Approaches Using Strategic Foresight in the Product Engineering Process**

Carsten Thümmel, Miriam Kleinschrot, Stefan Eric Schwarz, Andreas Siebe and Albert Albers, Institute of Product Engineering (IPEK), Karlsruhe Institute of Technology (KIT), 76131 Karlsruhe, Germany

**ID 80 Systematic Literature Review: A Comparative Study of Tech-Startup Success Factors Between Developing and Advance Economies**

Sonny Hendra Sudaryana, Budisantoso Wirjodirdjo and Agus Windharto, School of Interdisciplinary Management and Technology, Sepuluh Nopember Institute of Technology (ITS), Surabaya, Indonesia  
Ihya Ulumuddin SY, School of Business and Management, Bandung Institute of technology (ITB), Bandung, Indonesia

**ID 113 A Bibliometric Analysis of the Township Economy**

Lawrance Seseni, Department of Business Management, School of Management, College of Business and Economics, University of Johannesburg Auckland Park, Johannesburg, South Africa

**ID 121 Teacher Trainers' Perspective for Evaluation of Online Training: DEMATEL Approach**

Vasundhara Kaul, Founding Partner, Carpediem EdPsych Consultancy LLP, Bengaluru, India  
Arshia Kaul, Research Consultant, Carpediem EdPsych Consultancy LLP, Bengaluru, India

**ID 75 Analysis of a Workload in Healthcare through a Simulation Experiment and Data Acquisition by Wearable Devices**

Yuki Mekata, Department of Industrial Engineering and Management, Faculty of Engineering, Kanagawa University, Yokohama, Kanagawa, Japan  
Aika Kishigami, School of Science for Open and Environmental Systems, Graduate School of Science and Technology, Keio University, Yokohama, Kanagawa, Japan  
Jun Hamaguchi, Department of Clinical Engineering, Faculty of Human Care at Makuhari, Tohto University, Maihama, Chiba, Japan  
Miwa Nakanishi, Department of Industrial and Systems Engineering, Faculty of Science and Technology, Keio University, Yokohama, Kanagawa, Japan

**ID 72 Demand Forecasting for Catering Bento by Machine Learning Using Automatic Estimation of Product Popularity**

Koki Kitabayashi, Department of Industrial Engineering and Management, Graduate School of Engineering, Kanagawa University, Kanagawa, Japan  
Hideki Katagiri, Department of Industrial Engineering and Management, Faculty of Engineering, Kanagawa University, Kanagawa, Japan

**4:00 – 5:45 pm, November 14 (Tuesday)****Operations Management****Virtual Room 4**

Session Chair: Dr Xiaohua (Sean) Jin, Assoc Prof in Project Management, Director of Project Management Programs, School of Engineering, Design & Built Environment, Western Sydney University, NSW, Australia

**ID 107 Application of new line balancing on effectiveness of Lean manufacturing in optimising production processes in an automotive exhaust manufacturing company**

Saravanan Tanjong Tuan, Department of Manufacturing and Material Engineering, International Islamic University Malaysia, IIUM, Gombak, Selangor  
Assoc Prof. Dr. Mohd Radzi Bin Haji Che Daud, Department of Manufacturing and Material Engineering, International Islamic University Malaysia, IIUM 53100, Gombak, Selangor

**ID 236 Minimizing Waxes Processing Challenges expending lean approach**

Kemlall Ramsaroop Ramdass, Senior Lecturer, Department of Industrial Engineering, University of South Africa, Florida campus, Johannesburg, South Africa  
Bantubenzani Nelson Mdlolo, Lecturer, Department of Industrial Engineering, University of South Africa, Florida campus, Johannesburg, South Africa

**ID 223 Environmental constraint amongst the higher learning institution: Policy emendation with critical areas and society emerging**

Simphiwe Nicolas Ngcobo, Laboratory Technologist, Department of Industrial Engineering, University of South Africa, Florida campus, Johannesburg, South Africa  
Bantubenzani Nelson Mdlolo, Lecturer, Department of Industrial Engineering, University of South Africa, Florida campus, Johannesburg, South Africa

**ID 33 Implement Lean Principles of Problem-Solving Successfully in Malaysian Automotive**

ASM Touhidul Islam, Faculty of Industrial Management, University Malaysia Pahang, Pahang, Malaysia

**ID 95 Identification of Ergonomic Conditions of the attention service in the Booths of a service company**

Yahaira Celym Magno Ramos, Faculty of Engineering, University of Lima, Lima, Peru

Fiorella del Carmen Soto Linares, Faculty of Engineering, University of Lima, Lima, Peru  
Maria Teresa Noriega Aranibar, Faculty of Engineering, University of Lima, Lima, Peru

**ID 222 Developing a Multi-Objective Decision Making Model for Product Recall Problems**

Yacob Khojasteh, Professor, Graduate School of Graduate Studies, Sophia University, Tokyo, Japan

**ID 123 Automatic Menu Planning of Cafeterias Serving a la Carte Menu**

Shuntaro Yamazaki, Department of Industrial Engineering and Management, Graduate School of Engineering, Kanagawa University, Kanagawa, Japan  
Hideki Katagiri, Department of Industrial Engineering and Management, Faculty of Engineering, Kanagawa University, Kanagawa, Japan

**ID 92 Sustainable Procurement for Corporate organizations when Incorporating Small Medium Enterprise using Competitive Global Strategies in Gauteng**

Xhanti Dyonase, Andre Vermeulen and Jan Harm C. Pretorius, Postgraduate School of Engineering Management Faculty of Engineering and the Built Environment University of Johannesburg, South Africa

**ID 86 N-point Multivariate LSTM for Long-term Electrical Demand Forecasting with SHAP Explainable AI**

Fahim Muntasir, BRAC University, Dhaka, Bangladesh  
Subrata Talapatra, Khulna University of Engineering and Technology, Khulna, Bangladesh

**6:00 – 7:45 pm, November 14 (Tuesday)**

**LSS/Simulation Competitions**

**Virtual Room 4**

**Session Chair:** Dr Ki Pyung Kim, PhD, PMP, PMI-SP, MCTS, Senior Lecturer, Senior Lecturer in the Construction and Project Management, UniSA STEM University of South Australia, Australia, Visiting Professor, Hanyang University, Korea

**ID 144 Application of fuzzy analytical hierarchy process and discrete event simulation in shoe assembly line**

Aregawi yemane, Ethiopian institute of technology-mekelle, industrial engineering, mekelle, Ethiopia  
Million G/kiros, Ethiopian institute of technology-mekelle, industrial engineering, mekelle, Ethiopia  
Misgna Hailemichael, Bahirdar Institute of technology, Industrial engineering, Bahir dar, Ethiopia  
Tesfu Berhane, Ethiopia institute of technology-mekelle, textile and garment engineering, mekelle, Ethiopia  
Rahwa luel, Ethiopian institute of technology-mekelle, industrial engineering, mekelle, Ethiopia  
Freweini Ataklti, Ethiopian institute of technology-mekelle, industrial engineering, mekelle, Ethiopia  
Yonas Habtu, Debrebirhan university, industrial engineering, Ethiopia

**ID 54 Effect of the temperature of the electrolyte on the production of hydrogen, analyze using a zinc plate**

Ashikur Rahman, City University, Bangladesh

**ID 227 Envisioning P4.0 In Organisation X with Lean Six Sigma and The Shingo MODEL**

Heng Li Ying, School of Business, Singapore University of Social Sciences, Singapore, Singapore  
Tay Huay Ling, School of Business, Singapore University of Social Sciences, Singapore, Singapore

**ID 230 Inventory Management Optimization Study Case: Reducing Costs Through Packaging Bag Supply Efficiency Using Root Cause Analysis Approach**

Bonang Respati Satmoko, Undergraduate Program in Industrial Engineering Department, Faculty of Engineering, Universitas Sebelas Maret, Surakarta, Indonesia, Surakarta, Indonesia  
Wahyudi Sutopo, Industrial Engineering and Techno-Economics Research Group, Professor, Department of Industrial Engineering, Universitas Sebelas Maret, Surakarta, Indonesia, Surakarta, Indonesia

**8:00 – 9:45 pm, November 14 (Tuesday) High School and Middle School STEM Competition Virtual Room 4**

Session Chair:

**ID 134 Research on Motion Tracking using Facial Features**

Se In Jung and Shin Dong Ho, Graduate and Professor, My Paul School, 12-11, Dowontongmi-gil, Cheongcheon-myeon, Goesan-gun, Chungcheongbuk-do, Republic of Korea  
Jeongwon Kim, Student, Department of Economics, College of Economics, Nihon University, 3-2 Kanda-Misakicho, 1-chome, Chiyoda-ku, Tokyo, Japan

**ID 135 Research on a Movable Microcontroller-based Four-Legged Walking Robot System**

Yeonju Lee and Shin Dong Ho  
Student and Professor, My Paul School, 12-11, Dowontongmi-gil, Cheongcheon-myeon, Goesan-gun, Chungcheongbuk-do, Republic of Korea  
Jeongwon Kim, Student, Department of Economics, College of Economics, Nihon University, 3-2 Kanda-Misakicho, 1-chome, Chiyoda-ku, Tokyo, Japan

**ID 136 Research on Face Recognition System using Wavelet Analysis**

Benny Choi and Shin Dong Ho, Student and Professor, My Paul School, 12-11, Dowontongmi-gil, Cheongcheon-myeon, Goesan-gun, Chungcheongbuk-do, Republic of Korea  
Jeongwon Kim, Student, Department of Economics, College of Economics, Nihon University, 3-2 Kanda-Misakicho, 1-chome, Chiyoda-ku, Tokyo, Japan

**November 15, 2023 (Wednesday)**

**8:00 – 9:45 am, November 15 (Wednesday)**

**Plenary: Global Business Management**

**Onsite Room 1**

**Session Chair:** Prof. Dr Aries Susanty ST MT., Head of Optimization and Industrial Planning System Laboratory, Industrial Engineering Department Diponegoro University Central Java, Indonesia

**Speaker I:**

Prof. Dr Aries Susanty ST MT.  
Head of Optimization and Industrial



Planning System Laboratory  
Industrial Engineering Department  
Diponegoro University Central Java,  
Indonesia

**Speaker II:**

Rajkumar Elagiri Ramalingam Ph.D.  
Visiting Professor, Applied Artificial  
Intelligence Institute(A<sup>2</sup>I<sup>2</sup>)  
Deakin University, Melbourne  
Program Manager (Applied AI Algorithms),  
Apex Semi USA/ APAC

**Speaker III:**

Dr. Muhammad Fazal Ijaz  
Lecturer  
Melbourne Institute of Technology  
Melbourne, Victoria, Australia

**Speaker IV:**

John Kazemzadeh  
Program Manager  
Tata Consulting Services  
Melbourne, Australia

**8:00 – 9:45 am, November 15 (Wednesday)**

**Manufacturing**

**Onsite Room 2**

Session Chair: Dr. Adriano Gomes de Freitas, A/Prof at Impacta Technology Faculty, São Paulo, and Scholar at Federal University of ABC, Santo Andre, Brazil; Teaching Associate at Monash University Melbourne, Australia

**ID 40 Studying and Troubleshooting Lubricity Test on Pressure Guidewire Proximal and Distal Coatings**

Kuldeep Agarwal and Usama A. Khan, Department of Automotive and Manufacturing Engineering Technology, Minnesota State University Mankato Mankato, MN 56001, USA

**ID 100 A Mini Review on Machining of Aluminum**

RM Magabe, Department of Mechanical and Industrial Engineering Technology, University of Johannesburg, Johannesburg, Johannesburg, Republic of South Africa  
Sujeet Kumar Chaubey, Department of Mechanical and Industrial Engineering Technology, University of Johannesburg, Johannesburg, Johannesburg, Republic of South Africa  
Kapil Gupta, Department of Mechanical and Industrial Engineering Technology, University of Johannesburg, Johannesburg, Johannesburg, Republic of South Africa

**ID 101 A Research Study on Surface Roughness, Corrosion Rate, and Wire Erosion during WEDM of WC-Co Composites**

Kapil Gupta, Professor, Department of Mechanical and Industrial Engineering Technology, University of Johannesburg, Johannesburg, Johannesburg, Republic of South Africa

**ID 122 Diffusion of Multigenerational Technologies in the Indian Machine Tool Industry: Bass Model**

Amruta Patil and Mahak Bisen, Research Scholar, Department of Management Studies, Indian Institute of Technology, Madras, India  
Prakash L Sai, Professor, Department of Management Studies, Indian Institute of Technology, Madras, India

**8:00 – 9:45 am, November 15 (Wednesday)**

**Maintenance and Reliability**

**Onsite Room 3**

Session Chair: Dr. Nilupa Herath, Lecturer, Department of Infrastructure Engineering, University of Melbourne, Australia

**ID 16 Replacement last policy for cumulative damage models**

Shey-Huei Sheu, Department of Business Administration, Asia University, Taichung 41354, Taiwan  
Department of Medical Research, China Medical University Hospital, China Medical University, Taichung, Taiwan  
Department of Industrial Management, National Taiwan University of Science and Technology, Taipei 10607, Taiwan

**ID 36 Cost Benefit Analysis of Four Retrial Configurations with Warm Standby Components and Two Failure Modes**

Kuo-Hsiung Wang, Department of Business Administration, Asia University, Wufeng, Taichung 41354, Taiwan  
Wu-Lin Chen, Department of Computer Science and Information Management, Providence University, Taichung 43301, Taiwan  
Tseng-Chang Yeng, Department of Applied Mathematics, National Chung-Hsing University, Taichung 40227, Taiwan

**ID 37 A Replacement Model for a System Consisting of Two Units with Shock Damage Interaction**

Yu-Hung Chien and Jau-Chuan Ke, Professor, Department of Applied Statistics, National Taichung University of Science and Technology Taichung City, North District 40401, Taiwan  
Fu-Ming Chang, Professor, Department of Finance, Chao Yang University of Technology, Taichung County, Wufeng District 41349, Taiwan

**ID 38 An unreliable queueing system with queue-dependent heterogeneous servers**

Jau-Chuan Ke and Yu-Hung Chien, Professor, Department of Applied Statistics, National Taichung University of Science and Technology Taichung City, North District 40401, Taiwan  
Fu-Ming Chang, Professor, Department of Finance, Chao Yang University of Technology, Taichung County, Wufeng District 41349, Taiwan  
Chia-Jung Chang, Associate Professor, Department of Accounting Information, National Taichung University of Science and Technology, Taichung City, North District 40401, Taiwan

**ID 39 A vacation retrieval queue with two-way communication**

Fu-Min Chang, Professor, Department of Finance, Chaoyang University of Technology, Taichung County, Wufeng District 41349, Taiwan  
 Yu-Hung Chien and Jau-Chuan Ke, Professor, Department of Applied Statistics, National Taichung University of Science and Technology  
 Taichung City, North District 40401, Taiwan

**ID 41 Reliability of Sewerage Pipelines in South Africa**

Themba B. Masingi, Postgraduate School of Engineering Management, University of Johannesburg, Johannesburg, South Africa  
 Hannelie Nel, Postgraduate School of Engineering Management, University of Johannesburg, Johannesburg, South Africa

**ID 93 Electric Drive Health Assessment**

Pantaleon Su Lai Tiing, Suriatee Saikhoh Rosli, Muhammad Fiqri Abdul Rahman and Mohd Faiz Abdul Hamid, Electrical Engineering Department  
 Group Technical Solutions of PETRONAS, Kuala Lumpur, Malaysia

**ID 259 Reliability Demonstration Tests – Challenges and Opportunities in the automotive Industry**

Tobias Leopold, Professor, Faculty Mobility and Technology, Esslingen University of Applied Sciences, Germany

**8:00 – 9:45 am, November 15 (Wednesday)**

**Undergraduate Research Competition**

**Virtual Room 4**

Session Chair:

**ID 111 A Comparative Study of Used Coffee Grounds Fertilizer, Chemical Fertilizer, and Organic Fertilizer on Yield And Growth of Ipomea Aquatica In Home Gardening With The Use Of One-Way Anova and Kruskal-Wallis Test**

Norman Salvador University of Santo Tomas Philippines

**ID 218 The Analysis of Product Quality Improvement at Garment 3 of PT. Sri Rejeki Isman Tbk Using Failure Mode and Effect Analysis (FMEA) and Fault Tree Analysis (FTA) Method to Reduce the Number of Product Defects**

Alifiana Rahma Sari, Department of Industrial Engineering, Faculty of Engineering, Universitas Sebelas Maret Surakarta, Indonesia  
 Wahyudi Sutopo, Professor, Department of Industrial Engineering, Past Head of Department of Industrial Engineering, Head of Industrial Engineering and Techno-Economics Research Group, Vice Dean for Human Resources, Finance, and Logistics, Faculty of Engineering, Universitas Sebelas Maret (UNS), Surakarta, Indonesia  
 President, IEOM Indonesia Chapter

**ID 224 Internet of Things (IoT) for Fire Prevention at Home**

Miguel Angel Cordova Zevallos and Camila Alejandra Tuñoque De La Cruz, Universidad de Lima, Carrera de Ingeniería Industrial, Lima, Peru  
 José Antonio Taquía Gutiérrez, Universidad de Lima, Carrera de Ingeniería Industrial, Lima, Peru

**ID 260 Cooling Comfort with Less Cost: A Experimental Analysis on Ceiling Fan Energy Efficiency**

Rupesh Bhortake, Marathwada Mitramandal Institute of Technology, Pune, India  
 Jai Bhortake, Veermata Jijabai Technological Institute, Mumbai, India

**FYP****ID 249 Optimizing Computed Tomography (CT) Systems for Enhanced Security Screening Applications in Transportation Hubs and High-Security Areas**

Fatma Rashid and Fatma Khamis, Senior Students, School of Industrial Engineering, Higher Colleges of Technology (HCT), UAE  
 Nader Santarisi, Associate Professor - Industrial Engineering at the Higher Colleges of Technology, Dubai women's campus, UAE

**November 15 (Wednesday), 10:00 am**

**Keynotes**

**Onsite Room 1**

**10:00 am:** Chapter Presentations

**Keynote Host:** Dr. Matthew Pepper, Associate Professor, School of Business, Faculty of Business and Law, University of Wollongong NSW 2522 Australia

**10:20 am Keynote V:** Paul Childerhouse, PhD, Professor and Head of Department, Logistics and Supply Chain Management, RMIT University, Melbourne, Victoria, Australia

**11:00 am Keynote VI:** Professor Charles Mbohwa, Ph.D., Visiting Professor, University of Johannesburg, South Africa

**11:40 am Keynote VII:** Prof. Sardar M. N. Islam (Naz), Ph. D., LL. B. (Law), Professor, ISILC, Victoria University, Melbourne, Australia, Distinguished Visiting Professor of Artificial Intelligence, UnSri, Adjunct Professor of IT and Business, Armstrong Institute, Melbourne, Editor-in-Chief: IAIC Transactions on Artificial Intelligence

**12:20 pm Keynote VIII:** Dr Md Abdus Samad Kamal, Graduate School of Science and Technology, Gunma University, Kiryu, Japan

**2:00 – 3:45 pm, November 15 (Wednesday)**

**Plenary: Global Supply Chain and Logistics**

**Onsite Room 1**

Session Chair: Dr Sean Arisian PhD PEng

**Speaker I:**

Dr Sean Arisian PhD PEng  
 Associate Professor Supply Chain and

Logistics  
La Trobe Business School  
La Trobe University, Australia

**Speaker II:**

Associate Professor Tay Huay Ling  
Head of International Trade Management  
Minor  
School of Business/ Logistics and Supply  
Chain Management  
Singapore University of Social Sciences,  
Singapore

**Speaker III:**

Winda Nur Cahyo, PhD  
Associate Professor  
Industrial Engineering, Universitas Islam  
Indonesia, Indonesia

**Speaker IV:**

Peter Campbell  
Partner – Supply Chain and Operations  
Leader (Oceania)  
Ernst & Young  
Melbourne, Victoria, Australia

**2:00 – 4:00 pm, November 15 (Wednesday)**

**Lab visits**

**University of Melbourne**

**Telstra Creator Space Lab  
Science Gallery  
Digital Lab  
Sustainability Lab**

**2:00 – 3:45 pm, November 15 (Wednesday)**

**Operations Management**

**Onsite Room 3**

Session Chair: Dr Roberto Chavez Clavijo, Senior Lecturer, Supply Chain Management, Department of Management and Marketing, Swinburne Business School, Swinburne University of Technology, Victoria, Australia

**ID 81 Bridging Efficiency and Empathy: The Role of Psychosocial Safety Climate in Mitigating Emotional Stress and Fostering Organisational Citizenship Behavior (OCB) in Lean Manufacturing Environment**

G.G. Udaya Priyasantha Rathnayake, PhD Candidate, School of Business, Faculty of Business and Law, University of Wollongong (UOW) NSW, Australia

Anil Chandrakumara, Senior Lecturer in Global Strategy & Cross-Cultural Management, School of Business and Law, University of Wollongong Australia

Anura De Zoysa, Associate Professor, School of Business and Law, University of Wollongong, Australia

**ID 7 Benefits of Implementing Quality Management Systems in Exploration Drilling Operations - Global Perspectives**

Sambir Charles Mukwakungu, Refilwe Dipholo, Nita Sukdeo and Charles Mbohwa, Department of Quality and Operations Management University of Johannesburg, Johannesburg, South Africa

**ID 102 Green Cement Manufacturing in South Africa through Utilization of Supplementary Cementitious - Market Assessment**

Asser Letsatsi Tau, Emmanuel Innocents Edoun, Charles Mbohwa and Anup Pradhan, Faculty of Engineering and the Built Environment, School of Mechanical Engineering and Industrial Engineering, Department of Quality and Operations Management, University of Johannesburg, 55 Beit St, Doornfontein, Johannesburg, 2028, South Africa

**ID 103 Analysis of Equipment Failure in a Production Line of a Coal Fly Ash Plant**

Asser Letsatsi Tau, Emmanuel Innocents Edoun, Charles Mbohwa and Anup Pradhan, Faculty of Engineering and the Built Environment, School of Mechanical Engineering and Industrial Engineering, Department of Quality and Operations Management, University of Johannesburg, 55 Beit St, Doornfontein, Johannesburg, 2028, South Africa

**ID 108 A Concise Systematic Literature Review for Cement Manufacturing Decarbonization In South Africa**

Asser Letsatsi Tau, Emmanuel Innocents Edoun, Charles Mbohwa and Anup Pradhan, Faculty of Engineering and the Built Environment, School of Mechanical Engineering and Industrial Engineering, Department of Quality and Operations Management, University of Johannesburg, 55 Beit St, Doornfontein, Johannesburg, 2028, South Africa

**ID 53 Modeling and Comparison of Four Retrieval Systems with Warm Standby Components and Working Vacations**

Tseng-Chang Yen, Department of Applied Mathematics, National Chung-Hsing University, Taichung 40227, Taiwan

**ID 66 An Exact Solution Method for Cooking Scheduling Optimization Problems Considering Various Constraints of Cooking Facilities**



Kosuke Kobayashi and Hideki Katagiri, Department of Industrial Engineering and Management, Faculty of Engineering, Kanagawa University Kanagawa, Japan

**ID 73 An Automatic Menu Creation Model for School Lunch Based on Mathematical Optimization Considering the Frequency of Dishes and Ingredients**

Himawari Takeuchi, Department of Industrial Engineering and Management, Graduate School of Engineering, Kanagawa University, Kanagawa, Japan  
Hideki Katagiri, Department of Industrial Engineering and Management, Faculty of Engineering, Kanagawa University, Kanagawa, Japan

**ID 79 Assessment of the Performance of Physically-Constrained Fixed-Lane Queueing Systems**

Simon Anthony D. Lorenzo, Assistant Professor, Department of Industrial Engineering and Operations Research, University of the Philippines Diliman (UPD), Quezon City, Philippines  
Lizabeth Ann D. Franco, Lecturer, Department of Industrial Engineering and Operations Research, University of the Philippines Diliman (UPD), Quezon City, Philippines

**ID 258 Bibliometric analysis and Visualisation of reverse logistics and Bock chains in Southern Africa**

Tatenda Talent Chingono, University of Johannesburg, South Africa

**ID 268 Green Cement Manufacturing in South Africa through Utilization of Supplementary Cementitious Materials- Market Assessment**

Asser Tau, University of Johannesburg, Johannesburg, South Africa

**2:00 – 3:45 pm, November 15 (Wednesday)**

**Business Management**

**Virtual Room 4**

Session Chair: Dr Santoso Wibowo, Associate Professor, Centre for Intelligent Systems, School of Engineering and Technology, Central Queensland University, Australia.

**ID 112 Use of lean manufacturing tools to support sustainability initiatives**

Andrea Telcán-Guzmán, Business Administration School, Universidad del Azuay, Cuenca, Ecuador  
Juan Manuel Maldonado-Matute, Maria Jose Gonzalez Calle, Ana Carolina Armijos-Orellana, María Isabel Arteaga Ortiz and Pedro Fernando Guerrero Maxi, UDA Business Observatory, Business Administration School, Universidad del Azuay, Cuenca, Ecuador

**ID 139 Eco-efficiency consideration for investment portfolio determination via an advanced decision architecture**

Hsiao-Chen Tai, Shu-Yu Chen, Yi-Chou Huang, Hao-Hsuan Lai, Ruei-Lin Huang and Ming-Fu Hsu, Department of Business Management, National United University, No. 1, Lianda, Miaoli City 360301, Taiwan

**ID 229 The Effect of Service Quality, Product Innovation, External Factors on Sustainable Growth with Competitive Advantage as a mediator**

Roberto Tomahuw, Farida Jasfar and Robert Kristaung, Service Management Department, Trisakti University, Jakarta

**ID 10 Industrial Productivity Improvement Techniques at Northern Agro Services Ltd: A Case Study**

Durlave Roy, PGD Industrial Management, Bangladesh Institute of Management, Bangladesh

**ID 138 Analysis and Proposal for Enhancing Logistics and Commercial Functions in a Pet Food Industry in Paraguay**

Gabriela Dominguez, David Martínez, Fernando Ramos, Rubén Tapia and Andrea Insfran-Rivarola, Laboratorio de Producción y Métodos, Departamento de Ingeniería Industrial, Facultad de Ingeniería, Universidad Nacional de Asunción, San Lorenzo, Paraguay

**ID 2 Informed Decision Making on Prediction of Spare Parts Requirements Based-on Machine Learning Approach**

Abdul Rahman Rizki Wijaya, Department of Industrial Engineering, Universitas Islam Indonesia, Jl. Kaliurang km 14.4, Sleman, Yogyakarta, Indonesia  
Winda Nur Cahyo, Department of Industrial Engineering, Universitas Islam Indonesia, Jl. Kaliurang km 14.4, Sleman, Yogyakarta, Indonesia

**ID 119 Provision of Personal Protective Equipment and Sanitary Facilities to Female Construction Workers**

Simphiwe Nene and Bernadette Sunjka, School of Mechanical Industrial and Aeronautical Engineering, University of the Witwatersrand Johannesburg, South Africa

**4:00 – 5:45 pm, November 15 (Wednesday)**

**Panel: Supply Chain and Logistics**

**Onsite Room 1**

Session Chair: Dr. Gopinath (Gopi) Chattopadhyay, Federation University Australia, Melbourne, Australia

**Speaker I:**

Dr. Marjia Haque  
Systems Engineering  
Supply Chain Management & Decision  
Analytics  
University of New South Wales  
Canberra, Australian Capital Territory,  
Australia

**Speaker II:**

Ferry Jie, PhD  
Associate Professor of Supply Chain and  
Logistics Management  
Edith Cowan University (ECU)  
Joondalup, WA 6027  
Australia

**Speaker III:**

Muhammad Shahzeb

MBA-IM (University of Ballarat, Melbourne,  
Victoria, Australia)  
Sr. Lecturer (Operation and Supply Chain  
Management)  
Faculty of Business Management Villa  
College, Maldives

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**4:00 – 5:45 pm, November 15 ( Wednesday)****Energy/ Engineering Management****Onsite Room 3**

Session Chair: Dr Guilherme Luz Tortorella, Senior Lecturer, Mechanical Engineering, University of Melbourne, Australia

**ID 61 Industry 4.0-based Energy-Value Stream Mapping: connecting the flow of value with energy consumption in real time**

Guilherme Luz Tortorella, The University of Melbourne, Melbourne, Australia  
Daniel Nascimento, Universidad de Barcelona, Barcelona, Spain

**ID 219 Time Frames, Variables, and Performance Metrics Consideration in Renewable Energy Prediction Models**

Omid Motamedisedeh and Azharul Karim, School of Mechanical, Medical and Process Engineering, Faculty of Engineering, Queensland University of Technology, 2 George St, Brisbane City, QLD, 4000, Australia

**ID 78 Digital Platform Business Model within the Model of SGE - System Generation Engineering: Definition and Classification in Cyber-Physical Systems**

Albert Albers, Professor, Institute of Product Engineering (IPEK), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany  
Carsten Hahn, Patrick Brecht and Ümüs Cetinkaya, Karlsruhe University of Applied Sciences, Institute of Applied Research (IAF), Karlsruhe, Germany  
Felix Pfaff, Michael Schlegel and Maximilian Fischer, Institute of Product Engineering (IPEK), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany

**ID 125 The Adoption and Application of Technology Innovations in the Coal Processing Mining Industry- A South African Case Study**

Nomsa SM Mafodi and Jan Harm C Pretorius, Postgraduate School of Engineering Management, University of Johannesburg, South Africa

**ID 242 Geothermal Power Generation Options and Technologies**

Moses Jeremiah Barasa Kabeyi, Industrial Engineering Department, Durban University of Technology, Durban South Africa  
Oludolapo Akanni. Olanrewaju, Industrial Engineering Department, Durban University of Technology, Durban South Africa

**ID 247 Hydropower In the Sustainable Energy Mix**

Moses Jeremiah Barasa Kabeyi, Industrial Engineering Department, Durban University of Technology, Durban South Africa  
Oludolapo Akanni. Olanrewaju, Industrial Engineering Department, Durban University of Technology, Durban South Africa

**ID 262 Challenges and Opportunities for Industrial Engineering in Australia**

David Karr (CPEng FIEA), Federal President, Industrial Engineers Australia, Perth, Western Australia

**ID 266 Configurations of Requirements Instability in Enterprise Asset Development Projects**

Shobhit Mathur, IITB-Monash Research Academy, Indian Institute of Technology Bombay and Monash University, Australia  
Tarikere T. Niranjana, Shailesh J. Mehta School of Management, Indian Institute of Technology Bombay, India  
Kristian Rotaru, Monash Business School, Monash University, Caulfield East, VIC 3145, Australia

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**4:00 – 5:45 pm, November 15 (Wednesday)****Healthcare Systems****Virtual Room 4**

Session Chair: Dr Reema Harrison, Associate Professor, Centre for Health Systems and Safety Research, Australian Institute of Health Innovation, Faculty of Medicine, Health and Human Sciences, Macquarie University, NSW 2109, Australia

**ID 12 Pattern mapping for cancer prescription process: a case of healthcare operations in government administration in Thailand**

Praowpan Tansitpong, Assistant Professor, NIDA Business School, National Institute of Development Administration (NIDA), Thailand

**ID 127 Revitalizing Healthcare Finances: Empowering Teams for SMART Transformation Amidst Challenges**

Gokhan Anil, M.D., Mayo Clinic Health System, Southwest Minnesota Region, Minnesota  
Pawan Bhandari, Ph.D., Minnesota State University, Mankato, Minnesota  
Joshua Nicolai, J.D., M.B.A, Mayo Clinic, Rochester, Minnesota

**ID 235 Unraveling the Interplay between the Patient Satisfaction Survey and Hospital Performance Metrics**

Chamila Dissanayake, Pennsylvania State University, United States

**ID 264 Conceptual Design Development of SERVQUAL Dimensions and Attributes for Pet Hotels for Cats**

Erico Sofyan Chrissandhi, Master Program of Industrial Engineering Department, Faculty of Engineering, Universitas Sebelas Maret Surakarta, Surakarta, Indonesia  
Eko Pujiyanto and Retno Wulan Damayanti, Department of Industrial Engineering, Faculty of Engineering, Universitas Sebelas Maret Surakarta, Indonesia

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**6:00 – 7:45 pm, November 15 (Wednesday)****Sustainability and Green Systems****Virtual Room 4**

Session Chair: Dr Reza Kiani Mavi, Senior Lecturer, the School of Business and Law, Edith Cowan University, WA 6027, Australia

**ID 130 A Comprehensive Study on The Role of Database Management System in Advanced Driver-Assistance Systems**

Mehrab Masayeed Habib and A S M Shoaib, Philip M. Drayer Department of Electrical Engineering, Lamar University, Beaumont, Tx 77710, USA

Asif Mohammad Mithu, Department of Electrical Engineering and Computer Engineering, Villanova University, 800 E. Lancaster Ave. Villanova, PA  
Fakir Sheikh Zihad and Md. Yasin Arafat, Department of Industrial Engineering, Lamar University, Beaumont, Tx 77710, USA

**ID 57 Monitoring Social Networks for Event Management: Applicability of MEWMA for Parkrun**

Arya Karami and Seyed Taghi Akhavan Niaki, Department of Industrial Engineering, Sharif University of Technology, Tehran, Iran

**ID 85 An Offline Digital Twin for Resilience and Supplier Reliability in Perishable Food Supply Chains**

Pranav Sutar, Department of Production Engineering, National Institute of Technology Tiruchirappalli, Tiruchirappalli, Tamil Nadu 620015, India  
Jessica Olivares-Aguila and Alejandro Vital-Soto, Department of Management Science, Shannon School of Business, Cape Breton University, Sydney, NS B1M 1A2, Canada

**ID 239 Influential Criteria for Large-scale Factory and Warehouse Main Contractor Selection Used for End-to-End Procurement Risk Management**

Nannalin Tubpawatin, Cluster of Logistics and Rail Engineering, Faculty of Engineering, Mahidol University, Nakhon Pathom, Thailand  
Rawinkhan Srinon, Ph.D., Cluster of Logistics and Rail Engineering, Faculty of Engineering, Mahidol University, Nakhon Pathom, Thailand

**ID 189 Efficiency and Feasibility Analysis of a Renewable Energy Generation System based on Piezoelectric Principle**

Enma Arias-Pacheco and Claudia Lucho-Alvarez, Bachelor of Science in Industrial Engineering, Faculty of Engineering, Industrial Engineering Career, Universidad de Lima, Perú  
Juan Carlos Quiroz-Flores, Professor Researcher, Faculty of Engineering, Industrial Engineering Career, Universidad de Lima, Perú

**ID 190 Utilization of Soybean Hulls in Paper Production**

Ana Arévalos and Jorge Rodas†, Laboratorio de Control de Procesos, Departamento de Ingeniería Industrial, Facultad de Ingeniería – Universidad Nacional de Asunción. San Lorenzo, Paraguay  
Eduardo Redondo, Laboratorio de Optimización, Departamento de Ingeniería Industrial, Facultad de Ingeniería – Universidad Nacional de Asunción. San Lorenzo, Paraguay  
Andrea Insfrán-Rivarola, Laboratorio de Producción y Métodos, Departamento de Ingeniería Industrial, Facultad de Ingeniería – Universidad Nacional de Asunción. San Lorenzo, Paraguay  
Regina León, Departamento de Ingeniería Industrial, Facultad de Ingeniería – Universidad Nacional de Asunción. San Lorenzo, Paraguay

**ID 238 The Impact of Total Quality Management Implementation in Improving Customer Satisfaction in the South African Banking Sector**

Namhla Mata, Fundiswa Dyonase and Lawrance Seseni, Department of Business Management, School of Management, College of Business and Economics, University of Johannesburg, Johannesburg, South Africa

**ID 98 Usage Awareness of Remanufactured Products: A Case Study from the Kingdom of Saudi Arabia**

Murtadha Aldoukhi, Assistant Professor, Industrial Engineering Department, Al Yamamah University, Riyadh, Kingdom of Saudi Arabia

**ID 42 Exploring of Randomness in Daily Detected Overloaded Trucks (An Experimental Study)**

Abbas Mahmoudabadi, Director, Master Program in Industrial Engineering, Department of Industrial Engineering, MehrAstan University, Guilan, Iran  
Fateme Pourhossein Ghazimahalleh, Graduated Student, Department of Information and Commerce Technology, MehrAstan University, Guilan, Iran

## November 16, 2023 (Thursday)

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**8:00 – 9:45 am, November 16 (Thursday) Plenary: Industry Solutions and Industry 4.0 Onsite Room 1**

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**Session Chair:** Associate Professor Jo Staines, University of Melbourne, Australia

**Speaker I:**

Mahshid Zarehsharif, M.Eng  
Process Engineer  
Hydrogen Solutions Development  
Siemens Energy Australia  
Melbourne, Australia

**Speaker II:**

Dr. Ripon K. Chakraborty (Senior Member, IEEE)  
Lecturer (Assistant Professor Eqvnt.)  
Systems Engineering & Decision Analytics  
School of Engineering & Information Technology  
UNW Canberra, Australia

**Speaker III:**

Dr. Banu (Sarıkaya) Özkeser  
R&D Center Manager  
Koluman Automotive Industry &  
Visiting professor in Automotive Engineering in Cukurova University, Turkey

**Speaker IV**

Vikram Sachdeva  
Advanced Manufacturing Industry 4.0 Hub Manager (Consultant)  
Swinburne University of Technology  
Melbourne, Australia

**Speaker V**

**8:00 – 9:40 am, November 16 (Thursday)**

**Supply Chain Management**

**Onsite Room 2**

Session Chair: Dr Md Abdus Samad Kamal, Graduate School of Science and Technology, Gunma University, Kiryu, Japan

**ID 141 Application of Taguchi Method to improve the surface roughness of a lathe turning operation (A case study on Bahir Dar Flexible Manufacturing Workshop)**

Aregawi yemane, Ethiopian institute of technology-Mekelle, industrial engineering, Mekelle, Ethiopia  
million gebrekios, Ethiopian institute of technology-Mekelle, industrial engineering, Mekelle, Ethiopia  
Melkamu mengistnew, Bahir dar institute of technology, industrial engineering, Bahir Dar, Ethiopia  
Hagazi Abrha, Ethiopian institute of technology-Mekelle, industrial engineering, Mekelle, Ethiopia  
Kidane gidey, Ethiopian institute of technology-Mekelle, industrial engineering, Mekelle, Ethiopia

**ID 89 The Effect of Multiple Cues on the Quality Perception of Crowdfunding Products: A Cue Diagnosticity Framework**

Yao Zhang and Ying Tian, Department of Operations Management, School of Economics and Management, Dalian, University of Technology, Dalian, China

**ID 62 Development and Evolution of Smart Cities in Latin America and Their Impact on Sustainability. A Scoping Review**

Sergio Mastrogiovanni, New York University, New York, NY, USA  
IAE Business School, Buenos Aires, Argentina  
Guilherme Luz Tortorella, The University of Melbourne, Melbourne, Australia  
Universidade Federal de Santa Catarina, Florianópolis, Brazil

**ID 35 Evaluating the Relative Impacts of Digital Solutions on the Resilience of Agri-Food Supply Chains: Policy RoadMap for Australia**

Firouzeh Rosa Taghikhah, Lecturer, Discipline of Business Analytics, Business School, University of Sydney, Sydney, NSW, Australia  
Daniel Prior, Associate Professor, Management Group, School of Business, University of New South Wales, Canberra, 2612, ACT, Australia

**ID 48 Interaction Hierarchy to Sustainable Reverse Logistics Activities in Indonesia**

Hesti Maheswari and Elliot Simangunsong, School of Business and Economics, Universitas Prasetya Mulya, Tangerang-Banten, Indonesia

**ID 118 Inventory Cost Management Analysis Using Order Quantity Planning on Cold Rolled Coil Product in Indonesia and Thailand: Digital Price Setting**

Martino Wibowo, Postgraduate Program, Faculty of Economics, Universitas Terbuka, South Tangerang, Indonesia  
Damrongsak Hattasat, School of Business, Rajamangala university of Technology Suvarnabhumi, Phra Nakhon Si Ayyuthaya, Thailand  
Sompong Chuaynugul, International College, National Institute Development Administration (ICO-NIDA), Bangkok Krungthep Mahanakhorn, Thailand  
Faizul Mubarak, Postgraduate Program, Faculty of Economics, Universitas Terbuka, South Tangerang, Indonesia

**ID 257 Block chains and its future in reverse logistics in Southern Africa: A bibliographical approach.**

Tatenda Talent Chingono, University of Johannesburg, South Africa

**ID 267 Blockchain Technology for Sustainable Supply Chain**

Ngoc Dang Khoa Nguyen, PhD Scholar, School of Business and Law, Central Queensland University, Melbourne, Australia  
Imran Ali, Senior Lecturer, School of Business and Law, Central Queensland University, Melbourne, Australia

**8:00 – 9:45 am, November 16 (Thursday)**

**Artificial Intelligence/Digital transformation**

**Onsite Room 3**

Session Chair: Dr Mohsin Malik, Associate Professor & Director – Master of Project Management, Swinburn Business School, Swinburn University of Technology, Melbourne, Australia.

**ID 109 Digital Twin Framework of Manufacturing System Integrated with Renewables Based on Event-triggered Hybrid Scheduling**

Zhean Shao, The University of Melbourne, Australia

**ID 114 Generating Policy Alternatives for Decision Making: A Process Model, Behavioural Issues, and an Experiment**

Raimo P. Härmäläinen, Professor, Systems Analysis Laboratory, Aalto University, Finland  
Tuomas J. Lahtinen, Doctor of Technology, Systems Analysis Laboratory, Aalto University, Finland  
Kai Virtanen, Professor, Systems Analysis Laboratory, Aalto University, Finland

**ID 34 Enhancement of the Photocatalytic Characteristics of TiO<sub>2</sub> Nanoparticles Prepared by Green Synthesis Utilizing Azolla Pinnata Plant Extract for the Degradation of Beta-Blocker (Propranolol)**

Ravi Saini and Pradeep Kumar, Department of Chemical Engineering & Technology, Indian Institute of Technology (BHU), Varanasi, Uttar Pradesh 221005, India

**8:00 – 9:45 am, November 16 (Thursday)**

**Engineering Management/Project Management**

**Virtual Room 4**

Session Chair: Associate Professor Dr Ferry Jie, School of Business and Law, Edith Cowan University, Western Australia, Australia

**ID 287 Unlocking the Potential of Knowledge Management and Sharing in Knowledge Intensive Companies' Maintenance Departments: Barriers, Enablers, and Recommendations.**

Hamid Roham, Jorge F.S. Gomes, ISEG, University of Lisbon, Lisbon, Portugal  
Amir Reza Safdar Tourehei, Elham Kamouri Yousefabad, Sepideh Aghajani, Mohammad Ali Avestam, Ali Behnam and Arash Malekmohammadi  
Mapna Turbine Blade Engineering and Manufacturing CO.



**ID 15 A Survey of Radio Frequency Energy Harvesting Techniques: Towards Effective Powering of Mobile Devices**

Lukman Salihu, James Agajo, Bala Salihu and Supreme A. Okoh, Department of Telecommunication Engineering, School of Electrical Engineering and Technology, Federal University of Technology, Minna, Niger State, Nigeria

**ID 116 The Improvement of Energy Utilisation in African Breweries' Production Processes to Reduce CO2 Emissions**

Precious Mmofoa and Bernadette Sunjka, School of Mechanical, Industrial and Aeronautical Engineering, University of Witwatersrand (Wits) Johannesburg, South Africa

**ID 56 Production Model Based on Lean and SLP to Increase the Level of service in a Peruvian Textile SME**

Jose Emmanuel Cusi-Miranda and Marlon Frank Aquino-Julcarima, Facultad de Ingeniería. Universidad de Lima, Perú  
Martin Fidel Collao-Díaz, Research Professor, Facultad de Ingeniería. Universidad de Lima, Perú

**ID 76 Improving Knowledge Transfers at Witzenmann GmbH through the Application of the InKTI – Interdepartmental Knowledge Transfer Improvement Method**

Monika Klippert and Albert Albers, IPEK – Institute of Product Engineering, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany  
Dean Siebert and Hendrik Rust, Faculty of Management Science and Engineering, University of Applied Sciences (HKA), Karlsruhe, Germany  
René Rösler, Research & Development, Witzenmann GmbH, Pforzheim, Germany

**ID 87 Improvement model based on lean warehousing, kanban and bpm to increase the level of service of a lighting fixtures retailer**

Carol Sofia Pedragas-Castro, Faculty of Engineering and Architecture, University of Lima, Perú  
Francis Sofia Perez-Bartra, Faculty of Engineering and Architecture, University of Lima, Perú  
Martin Fidel Collao-Díaz, Research Professors, Faculty of Engineering and Architecture, University of Lima, Perú

**ID 49 DisruptinDisparities: Startups as Catalysts for Health Equity in Diabetes Management**

Aarthi Ramachandran, IIT Madras, India

**ID 68 A Meta-Analysis of Circular Practices Adoption: A Comparative Study of Start-ups and Incumbent Companies in Achieving Sustainable Development Goals**

Nandhini Priya Natarajan, IIT Madras, India

**ID 234 Digital Maturity Models in Higher Education Institutions: A Literature Review**

Imam Safi'I, Industrial and System Engineering, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia  
Mokhamad Suef and Putu Dana Karningsih, Industrial and System Engineering, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia

**ID 265 Monte Carlo Simulation of Project Completion Times: A Case Study for an Electric Vehicle Project**

Ümmügülüşüm Erdağı and Kemal Dinçer Dingec, Department of Industrial Engineering, Gebze Technical University, Kocaeli, Turkey  
Engin Sansarcı, Department of Industrial Engineering, Altınbaş University, İstanbul, Turkey

**ID 271 The Improvement of Energy Utilisation in African Breweries' Production Processes to Reduce CO2 Emissions**

Precious Mmofoa and Bernadette Sunjka, School of Mechanical, Industrial and Aeronautical Engineering, University of Witwatersrand (Wits), Johannesburg, South Africa

**ID 288 Impact of Blockchain in Enhancing Sustainable Supply-Chain Activities within Enterprises**

Sebonkile Thaba, Lecturer in Supply Chain Management, Department of Transport and Supply Chain Management, University of Johannesburg, Johannesburg, South Africa  
Charles Mbohwa and Nelson Madonsela, Department of Quality and Operations Management, University of Johannesburg, Johannesburg, South Africa

**ID 104 How Digital Transformation is Reshaping Supply Chains: From Networks to Ecosystems**

Evans Amoah, David Asamoah, Kwame Owusu Kwateng and John Serbe Marfo, Department of Supply Chain and Information Systems - School of Business, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana  
Francis Andoh-Baidoo, Full Professor in the Department of Information Systems, The University of Texas Rio Grande Valley, Robert C. Vackar College of Business and Entrepreneurship, McAllen, Texas, United States

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**November 16 (Thursday), 10:00 am****Keynotes****Onsite Room 1**

**10:00 am:** Welcome

**Keynote Host:** Dr. Imran Ali, MBA, PhD, Senior Lecturer, School of Business and Law Centre for Regional Economies and Supply Chains, Central Queensland University (CQU), Australia

**10:20 am Keynote IX:** Dr Peter Robertson, Honorary Research Fellow, University of Wollongong (UOW), Australia and Leadership in various industries in Australia

**11:00 am Keynote X:** Prof Lihai Zhang, PhD, M.Eng, CPEng, NPER, FIEAus, Professor of Infrastructure Protection & Management, Discipline Leader of the Engineering Management group, University of Melbourne, Melbourne, Australia

**11:40 am Keynote XI:** Dr Indra Gunawan, Associate Professor, Adelaide Business School, Faculty of Arts, Business, Law and Economics, University of Adelaide, Australia

**12:20 am Keynote XII:** Professor Rahmat Nurcahyo, PhD, Industrial Engineering Department, Universitas Indonesia (UI), Jakarta, Indonesia

**1:00 – 2:00 Lunch Break**

Session Chair: Dr Paulo Vaz Serra, Senior Lecturer, University of Melbourne, Australia

**Speaker I:**

Dr Kevin Otto  
Professor In Manufacturing & Industrial Systems  
Department of Mechanical Engineering  
University of Melbourne, Australia

**Speaker II:**

Dr. Matthew Pepper  
Associate Professor  
School of Management, Operations and Marketing  
University of Wollongong (UOW), New South Wales, Australia  
Editorial Advisory Boards for the International Journal of Lean Six Sigma, the Journal of  
Manufacturing Technology Management. and International Journal of Information and Operations  
Management Education

**Speaker III:**

Dr Ki Pyung Kim, PhD, PMP, PMI-SP, MCTS  
Senior Lecturer, Senior Lecturer in the Construction and Project Management, UniSA STEM  
University of South Australia, Australia  
Visiting Professor, Hanyang University, Korea

**3:20 pm Keynote XIII:** Keynote XIII: John Blakemore, PhD, CEO, Blakemore Consulting International, Adjunct Professor, University of Newcastle, Newcastle, NSW, AUSTRALIA

Session Chair: Dr. Ripon K. Chakraborty, Lecturer (Assistant Professor), Leader and Founder of Decision Support & Analytics Research Group, School of Engineering & Information Technology, UNSW Canberra, Australia.

**ID 14 Factors Influencing Eco-innovation in Halal Food SMEs in Malaysia: A Study from an Islamic Perspective**

Samer Al-shami, Universiti Tekinal Malaysia, Melaka, Malaysia

**ID 20 Sustainable Supply Chain's Main Challenges of the Pharmaceutical Industry: A Novel MCDM Approach**

Elnaz Arjmand, Master's Student in Health Economics, Department of Economics, Sapienza University of Rome, Rome, Italy  
Meysam Shaverdi, PhD Candidate in Supply Chain and Logistics, School of Accounting, Information Systems and Supply Chain, RMIT University Melbourne, Australia

**ID 58 National Policies Evaluation of Sustainable Supply Chain of Automobile Industry Using MCDM Models**

MohammadHossein Shaverdi, Master's Student in Public Policy, Department of Economics, Allameh Tabatabaei University, Tehran, Iran  
Meysam Shaverdi, PhD Candidate in Supply Chain and Logistics, School of Accounting, Information Systems and Supply Chain, RMIT University Melbourne, Australia

**ID 97 Analysis of the Fume Extractor Installation's Effects on Workplace Air Pollution – A SME Case Study**

Rizal Justian Setiawan, Master Student, Industrial Engineering and Management, Faculty of Engineering, Yuan Ze University, Taoyuan, Republic of China  
Yu-Tzu Chen, Assistant Professor, Industrial Engineering and Management, Faculty of Engineering, Yuan Ze University, Taoyuan, Republic of China  
Nur Azizah, Master Student, International Public Health, School of Public Health, China Medical University, Taichung, 406, Republic of China  
Chien-Yu Lin, Assistant Professor, International Public Health, School of Public Health, China Medical University, Taichung, 406, Republic of China  
Khakam Maruf, Operational Director, CV. Inanri Sukses Bersama, Kulon Progo, 55664, Indonesia

**ID 64 Improving Operational Performance of Low-level Technology Organizations Through Quality Management**

Hiluf Reda, Senior Lecturer, Department of Industrial Engineering, Debre Berhan University, Debre Berhan, Ethiopia  
Akshay Dvived, Senior Professor, Department of Mechanical and Industrial Engineering, Indian Institute of Technology, Roorkee, Roorkee-247667, Uttarakhand, India

Session Chair: Dr. Soheila Ghane

**Speaker I:**

Dr Srikanth Thudumu  
Senior Research Fellow  
Applied Artificial Intelligence Institute (A<sup>2</sup>I<sup>2</sup>)  
Deakin University, Melbourne, Australia

**Speaker II:**

Dr. Soheila Ghane  
Lead Data Scientist  
Co-Founder of Metaboid  
Melbourne, Victoria, Australia

**Speaker III:**

Dr. Susmita Saha

Deputy Director, Ageing and  
Neurodegeneration, School of Psychological  
Sciences  
Monash University  
Image and AI Scientist, Secretary  
IEEE Victorian Section  
Secretary, IEEE-VIC Women in Engineering

**Speaker IV:**

Amin Rigi  
Data Science Lead  
bp  
Melbourne, Victoria, Australia

**Speaker V:**

Reduan H Khan, PhD  
Product Owner Principal and Artificial  
Intelligence of Things (AIoT)  
Telstra, Melbourne, Victoria, Australia

**2:00 – 3:45 pm, November 16 (Thursday)**

**Lean Six Sigma**

**Virtual Room 4**

Session Chair: Dr. Marjia Haque, Systems Engineering, Supply Chain Management & Decision Analytics, UNSW Canberra, Australian Capital Territory, Australia

**ID 140 Assessing Hazard Level Perception of Colors: A Comparative Study with ANSI Recommendations**

Miskeen Ali Gopang, PhD Scholar and Lecturer, Department of Industrial Engineering and Management, Mehran University of Engineering and Technology, Jamshoro-76062-Sindh, Pakistan  
Tauha Hussain Ali, Professor, Department of Civil Engineering, Mehran University of Engineering and Technology, Jamshoro-76062-Sindh, Pakistan  
Shakeel Ahmed Shaikh, Associate Professor, Department of Industrial Engineering and Management, Mehran University of Engineering and Technology, Jamshoro-76062-Sindh, Pakistan

**ID 67 Video based Work Instructions (VWI) and its role in improving employee training, cross training, and productivity in small and medium manufacturing enterprise**

Kuldeep Agarwal and Pawan Bhandari, Department of Automotive and Manufacturing Engineering Technology, Minnesota State University, Mankato, MN 56001, USA

**ID 1 Integrating Tiny Machine Learning and Internet of Things (IoT) towards an efficient predictive maintenance system in Industry4.0: Challenges and Potential Solutions**

Nayef Abdulwahab Mohammed Alduais, Center of Intelligent and Autonomous Systems (CIAS), Faculty of Computer Science and Information Technology, Universiti Tun Hussein Onn Malaysia (UTHM), 86400, Parit Raja, Batu Pahat, Johor, Malaysia

**ID 4 Production Quality Improvement of Duplex Carton Packaging for AA Products Using the Six Sigma and Seven New Quality Tools Methods**

Mohammad Agung Saryatmo; Helena Juliana Kristina and Raditya Pradana Putra, Department of Industrial Engineering, Universitas Tarumanagara Jakarta, Indonesia

**ID 55 Reducing Molding Sand Variation at a Job Shop Casting Facility**

Kuldeep Agarwal and Ashley Folden-Ecker, Department of Automotive and Manufacturing Engineering Technology, Minnesota State University Mankato, MN 56001, USA

**ID 120 Machine Learning model for Healing analysis of Human Injury**

Shubhangi D C, Professor, Department of Computer Science, Visvesvaraya Technological University CPGS Kalaburagi, Karnataka, India  
BaswarajGadgay, Department of Electronics and Communication, Visvesvaraya Technological University CPGS Kalaburagi, Karnataka, India  
Bhagyashree, Department of Computer Science, Visvesvaraya Technological University CPGS Kalaburagi, Karnataka, India

**ID 226 Development of Digital Autonomous Maintenance Models in the Automotive Component Industry: A Literature Review**

Adi Rusdi Widya, Departemen Teknik Industri dan Sistem, Fakultas Teknologi Industri dan Sistem, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia  
Program Studi Teknik, Fakultas Teknik, Universitas Pelita Bangsa, Cikarang, Bekasi, Indonesia  
Dr.Ir. Mokh. Suef, M.Sc(Eng) and Dr.Eng.Ir. Erwin Widodo, M.Eng., Departemen Teknik Industri dan Sistem, Fakultas Teknologi Industri dan Sistem, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia

**ID 137 The Inter-organizational Network Evolution across the Tech-Startup Lifecycle Phases: A Cross-sectional study in the Indian context**

Anusha Sabhahit, Senior Research Scholar, Department of Management Studies, Indian Institute of Science, Bangalore, India  
Bala Subrahmanya Mungila Hillemane, Professor, Department of Management Studies, Indian Institute of Science, Bangalore, India

**4:00 – 4:45 pm, November 16 (Thursday) Panel: Reliability Engineering and Assets Mgt**

**Onsite Room 1**

Session Chair: Dr. Adriano Gomes de Freitas, Monash University Melbourne, Australia

**Speaker I:**

Dr. Gopinath (Gopi) Chattopadhyay  
Maintenance and Reliability Engineering  
Chair of Asset Management Council  
Australia

Federation University Australia  
Melbourne, Australia

**Speaker II:**

Andrew Sarah  
Melbourne Chapter Chair of the Asset  
Management Council  
Senior Project Manager  
Nomad Digital, Melbourne, Australia

**Speaker III:**

Shane Scriven  
Managing Director, SAS Asset Management  
Melbourne, Victoria, Australia

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**4:00 – 5:45 pm, November 16 (Thursday)      Panel: Women in Industry and Academia      Onsite Room 2**

Session Chair: Associate Professor Jo Staines, Enterprise Fellow, Mechanical Engineering, University of Melbourne, Australia.

**Speaker I:**

Dr Spring Zhou  
Senior Lecturer, School of Business  
Faculty of Business and Law  
University of Wollongong, Australia

**Speaker II:**

Dr. Hannelie Nel  
Regional Quality, Risk and HSE Manager  
Worley Middle East-UAE, Oman, North  
Africa and Iraq

**Speaker III:**

Dr Catherine Lou  
Senior Lecturer in supply chain and logistics  
Victoria University Business School  
Victoria University, Australia

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**4:00 – 5:45 pm, November 16 (Thursday)      Decision science      Onsite Room 3**

Session Chair: Dr Md Abdus Samad Kamal, Graduate School of Science and Technology, Gunma University, Kiryu, Japan

**ID 65    A Simulation-Optimization-Based Decision Support System for Optimising Project Risk Treatment Decisions Considering Risk Interdependencies**

Li Guan and José M. Merigó, School of Computer Science, Faculty of Engineering and Information Technology, University Technology Sydney (UTS) Ultimo, NSW 2007, Australia  
Ripon K. Chakraborty and Alireza Abbasi, School of Systems and Computing, University of New South Wales (UNSW), Canberra, ACT 2600, Australia

**ID 110    An Explainable Artificial Intelligence Model for Project Risk Assessment**

Bodrunnessa Badhon, School of Systems & Computing, UNSW Canberra at ADFA, Canberra, ACT, Australia  
Ripon K. Chakraborty, School of Systems & Computing, UNSW Canberra at ADFA, Canberra, ACT, Australia  
Sreenatha Anavatti, School of Eng & Tech, UNSW Canberra at ADFA, Canberra, ACT, Australia

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**4:00 – 5:45 pm, November 16 (Thursday)      Production Engineering      Virtual Room 4**

Session Chair: Dr Wen Li, Senior Lecturer In Manufacturing, Mechanical Engineering, University of Melbourne, Australia

**ID 231    Line Balancing and Investment Cost Analysis of Sewing Departement at PT XYZ using Ranked Position Weight Method**

Bagus Susila, Undergraduate Program in Industrial Engineering Department, Faculty of Engineering Universitas Sebelas Maret Surakarta, Jl. Ir. Sutami, 36 A, Surakarta, Indonesia  
Wahyudi Sutopo, University Centre of Excellence for Electrical Energy Storage Technology, Department, Faculty of Engineering, Research Group Industrial Engineering and Techno-Economic, Industrial Engineering Department, Faculty of Engineering, Universitas Sebelas Maret, Surakarta, Jl. Ir. Sutami, 36 A, Surakarta, Indonesia

**ID 240    Analysis of The Application of Ergonomics to Increase Productivity In Manufacturing Companies: A Systematic Review of The Literature**

Raúl Alejandro Ortega-Marchisio, Facultad de Ingeniería, Universidad de Lima, Perú  
Martin Fidel Collao-Díaz, Research Professor, Facultad de Ingeniería, Universidad de Lima, Perú

**ID 60    The Integration of Toyota Production System (TPS) and Lean Operations**

Judith Nkuna, Department of Quality and Operations Management, Department of Engineering Management, University of Johannesburg South Africa  
Andre Vermeulen, Post Graduate School Engineering Management, University of Johannesburg, Auckland Park, Johannesburg, Gauteng, South Africa  
Jan-Harm C. Pretorius, Post Graduate School Engineering Management, University of Johannesburg, Auckland Park, Johannesburg, Gauteng, South Africa

**ID 94    Mixed-Integer Linear Programming Model for the Dual-Resource Flexible Job-Shop Scheduling Problem**

Vedant Agrawal, Department of Mechanical Engineering, Indian Institute of Technology Kharagpur, West Bengal 721302, India



Alejandro Vital-Soto and Jessica Olivares-Aguila, Department of Management Science, Shannon School of Business, Cape Breton University  
Sydney, NS B1M 1A2, Canada

**ID 83 Adoption of Agile Project Management: A Case Study in a Technology Service Company**

Aquiles Nogueira, Master Student in the Department of School of Management, Federal University of Paraná, UFPR, School of Management PR,  
Curitiba, Brazil

Guilherme Francisco Frederico, Professor in the Department of School of Management, Federal University of Paraná, UFPR, School of Management,  
PR, Curitiba, Brazil

**ID 228 Simulation of Clinical Laboratory Process Improvement based on ISO 15189 Standard**

Alexia Valery Bazán Rodríguez and Gabriela Noelí Tapia Alfaro, Universidad de Lima, Carrera de Ingeniería Industrial, Lima, Perú

José Antonio Taquía Gutiérrez, Universidad de Lima, Carrera de Ingeniería Industrial, Lima, Perú

**ID 274 Digital Twin Enhanced Smart Assembly System Design and Analysis for Resilient Operations**

Mulang Song, Ph.D. Candidate of Mechanical Engineering, Georgia Institute of Technology, Atlanta, USA

Shu Wang, Ph.D. Candidate of Mechanical Engineering, Georgia Institute of Technology, Atlanta, USA

Yiyun Fei, Ph.D. Candidate of Mechanical Engineering, Georgia Institute of Technology, Atlanta, USA

Jianxin(Roger) Jiao , Associate Professor of Mechanical Engineering, Georgia Institute of Technology, Atlanta, USA

**ID 263 A Process Innovation In The Way of Learning**

Dr. Banu (Sarıkaya) Özkese, R&D Center Manager, Koluman Otomotiv Endüstri A.Ş., Mersin, Turkey

**7:00 – 10:00 pm, November 16, Conference Awards Ceremony**

# Six Sigma Certification Green Belt Workshop

November , 2023



## Dr. Ahad Ali

Associate Professor

Director, Bachelor of Science in Industrial Engineering

Director, Master of Science in Industrial Engineering

Director, Graduate Certificate in Lean Six Sigma

Director of Smart Manufacturing and Lean Systems Research Group

A. Leon Linton Department of Mechanical, Robotics and Industrial Engineering

Lawrence Technological University, Southfield, Michigan, USA

Executive Director, IEOM Society International

Dr. Ahad Ali is an Associate Professor and Director of Bachelor of Science in Industrial Engineering and Master of Science in Industrial Engineering in the A. Leon Linton Department of Mechanical, Robotics and Industrial Engineering at the Lawrence Technological University, Michigan. Dr. Ali is the Director of Smart Manufacturing and Lean Systems Research Group. He earned B.S. in Mechanical Engineering from Khulna University of Engineering and Technology, Bangladesh, Masters in Systems and Engineering Management from Nanyang Technological University, Singapore and Ph.D. in Industrial Engineering from University of Wisconsin-Milwaukee. Dr. Ali is the Executive Director of IEOM Society and Conference Chair of the Sixth International Conference on Industrial Engineering and operations Management, Kuala Lumpur 2016. He advised six doctorate students in Doctor of Engineering in Manufacturing Systems. Dr. Ali has published journal and conference papers. He was past President of IIE Lean Division. Dr. Ali has done research projects with Chrysler, Ford, DTE Energy, Delphi Automotive System, GE Medical Systems, Harley-Davidson Motor Company, International Truck and Engine Corporation (ITEC), National/Panasonic Electronics, and Rockwell Automation. His research interests include quality, reliability, six sigma, manufacturing, simulation, optimization, scheduling, maintenance, e-manufacturing, lean, CAE and GD&T and. He is a member of ASEE, IEEE, IEOM, INFORMS, and SME.

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|--|---|--|
| <p><b>Six Sigma Certification Topics</b></p> <ul style="list-style-type: none"> <li>▪ Six Sigma Fundamentals</li> <li>▪ 3.4 PPM</li> <li>▪ Business case</li> <li>▪ Implementation challenges</li> <li>▪ GD&amp;T</li> </ul> <p><b>Define</b></p> <ul style="list-style-type: none"> <li>▪ Project Charter</li> <li>▪ Process Maps</li> <li>▪ SIPOC</li> <li>▪ Matrix Diagrams</li> <li>▪ Critical to Quality (CTQ) Metrics</li> <li>▪ DPMO</li> <li>▪ Pareto Chart</li> <li>▪ Voice of Customers</li> <li>▪ Stakeholder Analysis</li> <li>▪ Focus Group</li> <li>▪ Cpk</li> </ul> | <p><b>Measure</b></p> <ul style="list-style-type: none"> <li>▪ Process analysis</li> <li>▪ Probability, Statistics and Distribution</li> <li>▪ Data collection and analysis</li> <li>▪ Gage Repeatability and Reproducibility (R&amp;R)</li> <li>▪ Process Capability</li> <li>▪ X-Bar Charts, Run Charts, Moving Average Charts, EWMA Charts, Attribute Charts, Takt Time</li> <li>▪ Standardization, Spaghetti Diagrams, and Setup Reductions</li> </ul> <p><b>Analyze</b></p> <ul style="list-style-type: none"> <li>▪ Value Stream Map</li> <li>▪ Hypothesis Testing</li> <li>▪ Goodness of fit test</li> <li>▪ Regression Analysis</li> <li>▪ Cause &amp; Effect Diagrams</li> <li>▪ ANOVA</li> <li>▪ Confidence Interval</li> </ul> | <p><b>Improve</b></p> <ul style="list-style-type: none"> <li>▪ Lean Tools to reduce NVA</li> <li>▪ 5S, Kaizen and Seven Zeros</li> <li>▪ TPS Principles</li> <li>▪ FMEA</li> <li>▪ Simulation</li> <li>▪ Design of Experiments (DOE)</li> <li>▪ Statistical Process Control (SPC)</li> <li>▪ Analysis of Variance (ANOVA)</li> <li>▪ Solutions Validation</li> <li>▪ Hypothesis Tests</li> </ul> <p><b>Control</b></p> <ul style="list-style-type: none"> <li>▪ Control Plan</li> <li>▪ SPC</li> <li>▪ Monitoring and Tracking</li> <li>▪ DFSS</li> <li>▪ PDCA</li> </ul> <p><b>Case Study</b></p> |
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# International Journal of Industrial Engineering and Operations Management



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**7<sup>th</sup> North American IEOM Conference, Orlando, USA, June 11-14, 2022**

Venue: Holiday Inn &amp; Suites Across from Universal Orlando. Host: Florida Polytechnic University





## IEOM Student Chapters



**Pontificia Universidad Católica del Perú (PUCP), Lima, Peru**



**Chinhoyi University of Technology (CUT), Zimbabwe**





**IEOM Student Chapter at JNTUH University College of Engineering Hyderabad, Kukatpally, Hyderabad, Telangana, India**



# IEOM Student Chapters around World

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| <b>Algeria</b>   | 76. Global Institute Of Eng and Technology, Hyderabad     | 150. National Univ of San Antonio Abad, Cusco          |
| 1. Adrar University  | 77. VNR Vignana Jyothi Institute of Eng and Technology    | 151. Universidad de Lima (ULima)                       |
| <b>Australia</b>   | 78. Siddhartha Institute of Engineering & Technology      | 152. Universidad Peruana de Ciencias Aplicadas (UPC)   |
| 2. Queensland University of Tech., Brisbane                    | 79. Osmania University – The University College of Eng    | 153. Universidad Ricardo Palma (URP)                   |
| 3. UNSW-Canberra   | 80. VJTI Mumbai – Veermata Jijabai Technologic. Institute | 154. Pontificia Universidad Católica del Perú (PUCP)   |
| <b>Bahrain</b>   | 81. BML Munjal University, Gurugram, India                | 155. Universidad Privada del Norte (UPN)               |
| 4. University of Bahrain                                       | 82. AKTU University, Kanpur, India                        | 156. Universidad Continental (UContinental)            |
| <b>Bangladesh</b>  | 83. Mufakkhamjah College of Eng. and Tech, Hyderabad      | 157. Universidad de Ingeniería y Tecnología (UTEC)     |
| 5. Ahsanullah University of Sci & Tech (AUST)                  | 84. Methodist College of Engineering and Technology       | 158. Universidad Nacional de Ingeniería (UNI)          |
| 6. Bangladesh Institute of Management (BIM)                    | 85. Vardhaman College of Engineering                      | 159. University of San Martin de Porres (USMP)         |
| 7. Bangladesh University of Textiles (BUTEX)                   | <b>Indonesia</b>  | <b>Philippines</b>                                     |
| 8. BUET  | 86. Atma Jaya Catholic University                         | 160. Bulacan State University, Malolos City, Bulacan   |
| 9. CUET  | 87. Bina Nusantara University (Binus), Indonesia          | 161. LPU Laguna  |
| 10. Daffodil International University (DIU)                    | 88. Institut Teknologi Bandung                            | 162. Mapua University                                  |
| 11. DUET, Gazipur  | 89. Institut Teknologi Sepuluh Nopember (ITS)             | 163. De La Salle University (DLSU) Manila              |
| 12. European University of Bangladesh                          | 90. Sampoerna University, Jakarta                         | 164. Adamson University                                |
| 13. International Islamic University of Chittagong             | 91. Shipbuilding Institute of Polytechnic Surabaya        | 165. CEBU Technological University                     |
| 14. Islamic University of Technology (IUT)                     | 92. Tarumanagara University                               | 166. University of San Jose-Recoletos                  |
| 15. IUBAT  | 93. UIN Sultan Syarif Kasim, Riau                         | <b>Portugal</b>  |
| 16. Jessore University of Science and Technology               | 94. Universitas Diponegoro (Undip)                        | 167. ISEL – Instituto Superior De Engenharia de Lisboa |
| 17. Khulna University (KU)                                     | 95. Universitas Gadjah Mada (UGM)                         | <b>Qatar</b>   |
| 18. Khulna University of Eng and Tech (KUET)                   | 96. Universitas Iqra Buru                                 | 168. Qatar University                                  |
| 19. Military Institute of Science and Technology               | 97. UIN Sunan Kalijaga, Yogyakarta                        | <b>Saudi Arabia</b>                                    |
| 20. National Institute of Textile Eng & Res (NITER)            | 98. Universitas Islam Negeri Alauddin Makassar            | 169. Alfaisal University                               |
| 21. Rajshahi University (RU)                                   | 99. Universitas Sebelas Maret (UNS), Surakarta            | 170. Effat University                                  |
| 22. SUST   | 100. University of Indonesia                              | 171. King Abdulaziz University (KAU)                   |
| 23. University of Chittagong                                   | 101. Universitas Sumatera, Utara Medan                    | 172. King Abdulaziz University, Rabigh                 |
| 24. World University Bangladesh (WUB)                          | 102. Narotama University, Surabaya                        | 173. King Fahd Univ of Petroleum and Minerals (KFUPM)  |
| 25. BAUST  | 103. Universitas Pakuan, Bogor                            | 174. King Khalid University, Abha                      |
| 26. American International University-Bangladesh (AIUB)        | 104. Trilogi University                                   | 175. King Saud University (KSU)                        |
| <b>Botswana</b>  | <b>Iran</b>   | 176. Umm Al-Qura University (UQU)                      |
| 27. University of Botswana                                     | 105. MehrAstan University, Guilan                         | 177. Princes Nourah University (PNU)                   |
| <b>Brazil</b>  | 106. University of Eyvanekey                              | 178. Prince Sattam Bin Abdulaziz University            |
| 28. Federal University of Sao Carlos (UFSCar)                  | 107. Technical and Vocational University (TVU)            | 179. Prince Sultan University (PSU)                    |
| 29. Federal University of Santa Catarina (UFSC)                | <b>Iraq</b>   | 180. Taibah University                                 |
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| 37. University of Waterloo                                     | 113. Ashikaga University                                  | 188. Tshwane University of Technology (TUT)            |
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| 39. Fundación Univ. Tecn. Comfenalco, Cartagena, Bolivar       | <b>Kenya</b>  | 191. Vaal University of Technology (VUT)               |
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| <b>Ecuador</b>   | 120. Universiti Tun Hussein Onn Malaysia (UTHM)           | 196. Chiang Mai University                             |
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| 47. Fayoum University  | 123. Universidad del Caribe, Cancun                       | 198. University of Science & Technology of Fujairah    |
| 48. British University in Egypt                                | <b>Morocco</b>  | <b>UK</b>  |
| <b>Ethiopia</b>  | 124. Akhawayn University                                  | 199. University of Derby                               |
| 49. Bahir Dar Institute of Technology                          | 125. Ecole Mohammadia d'Ingénieurs (EMI)                  | 200. University of the West of England, Bristol        |
| <b>Finland</b>   | 126. Sidi Mohamed Ben Abdellah University of Fez          | <b>USA</b>   |
| 50. University of Vaasa  | 127. N. School of Appl Sci. Kenitra, Ibn Tofail Univ      | 201. Central Connecticut State University              |
| <b>France</b>  | 128. Ecole Supérieure De Technologie, Fez                 | 202. Eastern Michigan University                       |
| 51. IESEG School of Management                                 | <b>Mozambique</b>   | 203. Lawrence Technological University, Michigan       |
| 52. Lorraine University, Metz                                  | 129. Eduardo Mondlane University                          | 204. University of the District of Columbia            |
| <b>Ghana</b>   | <b>Namibia</b>  | 205. Indiana State University                          |
| 53. Technological Education Institute (TEI), Thessaly, Larissa | 130. National Univ. of Sci. and Tech. in Windhoek         | 206. Florida Polytechnic University                    |
| <b>Greece</b>  | <b>Nepal</b>  | 207. Buffalo State College                             |
| 54. Accra Technical University                                 | 131. Kathmandu University                                 | 208. Southern Arkansas University                      |
| <b>Haiti</b>   | 132. Tribhuvan University                                 | 209. Western Michigan University                       |
| 55. Université Quisqueya                                       | <b>Nigeria</b>  | 210. Loyola University Chicago                         |
| <b>India</b>   | 133. Covenant University                                  | 211. Minnesota State University, Mankato               |
| 56. College of Eng and Tech, Bhubaneswar, Odisha, India        | 134. University of Ibadan                                 | <b>Venezuela</b>                                       |
| 57. College of Engineering Guindy, Chennai                     | 135. University of Nigeria, Nsukka                        | 212. Catholic University Andrés Bello, Caracas         |
| 58. Guru Nanak Dev Engineering College                         | 136. University of Benin                                  | <b>Vietnam</b>   |
| 59. Pandit Dendayal Petroleum Univ., Gujrat                    | 137. Olabisi Onabanjo University                          | 213. CFVG, Ho Chi Minh City, Vietnam                   |
| 60. P.D.A. College of Engineering, Gulbarga                    | <b>Oman</b>   | <b>Zambia</b>  |
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| 63. Universal College of Eng & Tech (UCET), Guntur             | <b>Pakistan</b>   | 216. Evelyn Hone College                               |
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| 65. Jawaharlal Nehru Technological University Hyderabad        | 141. Government College University Faisalabad             | 217. University of Zimbabwe, Harare                    |
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| 71. Aligarh Muslim University, Aligarh                         | <b>Papua New Guinea</b>                                   | 222. Bay Area of San Francisco & San Jose, CA          |
| 72. Mahant Bachittar Singh College Eng & Tech, Jammu           | 147. Papua New Guinea University of Technology            | 223. Arongghata, Khulna, Bangladesh                    |
| 73. Baba Banda Singh Bahadur Eng College                       | <b>Paraguay</b>   |  |
| 74. Ramaiah University of Applied Sciences                     | 148. National University of Asuncion                      |  |
| 75. Nawab Shah Alam Khan College Eng & Tech (NSAKCET)          | 149. Universidad del Cono Sur de las Américas             |  |
|  | <b>Peru</b>   |  |

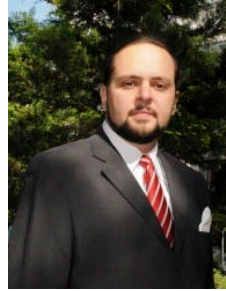
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Past Pro-Vice Chancellor Strategic  
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Department of Management  
IESEG School of Management  
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Vice Dean, Faculty of  
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**Industrial Engineering and Operations Management Society International**



# Upcoming IEOM Conferences



**6<sup>th</sup> Industrial Engineering and Operations Management Bangladesh Conference**  
**Dhaka, Bangladesh, Dec. 26-28, 2023**  
 Venue: Krishibid Institution, KIB, Farmgate + Virtual



**Chittagong University of Engineering & Technology (CUET)**



**2nd Australian Conference on Industrial Engineering and Operations Management**  
**Nov. 14-16, 2023, Melbourne**  
 Venue: Batman's Hill Hotel on Collins



**14<sup>th</sup> International Conference on Industrial Engineering and Operations Management**  
**February 12-14, 2024, Dubai, UAE**  
 Venue: Hyatt Regency Dubai, Host: Khalifa University



**جامعة خليفة**  
**Khalifa University**



**5<sup>th</sup> African International Conference on Industrial Engineering & Operations Management**  
**Johannesburg/Pretoria, South Africa**  
 April 23-25, 2024, Venue: CSIR ICC



**UNISA** university of south africa

**SOMA** Society of Operations Management in Africa



**5<sup>th</sup> South American Conference on Industrial Engineering & Operations Management**  
**Bogota, Colombia, May 7-9 2024**  
 Host: Fundación Universitaria UNIR Colombia



**unir** FUNDACIÓN UNIVERSITARIA INTERNACIONAL DE LA RIOJA COLOMBIA



**9<sup>th</sup> North American Conference on Industrial Engineering and Operations Management**  
**Washington, DC, USA, June 4-6, 2024**  
 Host: University of the District of Columbia (UDC)  
 Venue: UDC Campus, 4200 Connecticut Ave NW



**Host University**  
**UNIVERSITY OF THE DISTRICT OF COLUMBIA**  
 1851



**7<sup>th</sup> European Conference on Industrial Engineering & Operations Management**  
**Augsburg / Munich, Germany**  
 July 16-18, 2024  
 Host: Augsburg Technical University



**Hochschule Augsburg**  
 University of Applied Sciences  
**Augsburg Technical University of Applied Sciences**



**5<sup>th</sup> Asia Pacific Conference on Industrial Engineering and Operations Management**  
**Sept. 10-12, 2024, Tokyo, Japan**  
 Host: Hosei University, Venue: Yokohama



**法政大学**  
**HOSEI University**

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