













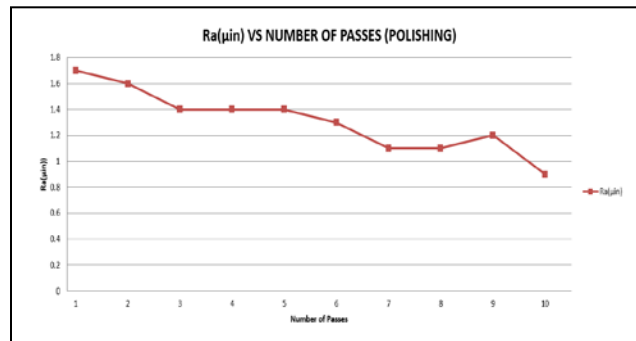






Table 6. 50N Force Setting with Green Bar Abrasive Polishing Material and Resulting Surface Roughness

DATA POINT A	FORCE CONTROL 50N	ACCESSORY TOOL- FELT WHEEL
EXPECTED RA 8 ( $\mu$ IN) OR LOWER	TIME TAKEN PER PASS – 3 SECONDS	METHOD – ROUGH POLISHING
SURFACE METERS COVERED PER PASS	TOOL SPEED – 2990 RPM	ABRASIVE MATERIAL – GREEN BAR



#### 4. Conclusion

The use of industrial robots in the automated polishing process has been limited mainly due to the requirements of the surface finish and also the complexity of the surface being polished. With advances in force torque sensor technology and also programming techniques it is now possible to achieve improved performance results for the polishing process at the same time reducing the lead times. In this paper a six axis robotic system with a force torque sensor for high precision extrusion die molds has been shown to producing results better than the bench mark requirements as well as reducing the lead time considerably. However the research has shown that the polishing process of the co extrusion die could not be polished a 100%. Final finishing will still need to be completed by manual process.

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## **Biography**

Dr.Srinivas Ganapathyraju is a Professor and program coordinator for the Electromechanical Engineering program at Sheridan Institute of Technology in Ontario, Canada. He has over 15 years of experience in industry and academia. He has worked as an automation design engineer in Singapore, designing pick and place manipulators used in integrated microchip testing and assembly. As an engineering intern at Jaguar Cars in Birmingham, England, he worked on an artificial neural network system to test for spot weld quality, which was part of his master's project work. He was also an industrial engineering intern at Helwig Carbon Products in Milwaukee, Wisconsin, USA. He was a teaching assistant at the University of Wisconsin – Milwaukee, prior to joining Sheridan

He received his B.Tech (Honors) degree in Mechanical Engineering from the University of Zimbabwe, an MSc degree in Advanced Manufacturing Systems from the Nottingham Trent University in England and PhD in Industrial and Manufacturing Engineering with a minor in Computer Science from the University of Wisconsin - Milwaukee. . He has been active in applied research and awarded NSERC funding for his work. His teaching and research interests are in the area industrial robotics and automation, Computer Aided Design and Manufacturing, and Machine Vision. He has presented a number of research papers at international conferences in the area of robotics and machine vision.