

Surface profile of objects for 3D printers by fringe pattern

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Abstract

Fringe projection entails projecting a fringe pattern or grating on an object and viewing it from a different direction. It is a convenient technique for contouring objects that are too coarse to be measured with standard interferometry. Fringe projection is related to optical triangulation using a single point of light and light sectioning where a single line is projected onto an object and viewed in a different direction to determine the surface contour (Case et al. 1987). The fringe patterns are projected on to the object surface and the deformed grating image is captured by a CCD camera for subsequent analysis. Phase shifting techniques have been employed to determine the phase value. The phase variation is achieved by using a linear translation stage incorporated to the grating. In this paper, the surface profile of objects for 3D printers is determined by using fringe pattern.

Biography

Javier Cruz Salgado BS, Industrial Engineering, Universidad Tecnológica de León, March 2007. MS, Manufacturing and Industrial Engineering, CIATEC/CONACYT, August 2012. PhD Manufacturing and Industrial Engineering 2015, CIATEC/CONACYT. Intern at Materials Research Department CIATEC 2011-2012. Research stay at Illinois Institute of Technology in the Department of Applied Mathematics 2013.