

Mechanical and Tribological Behaviour of 3D Printed Polymers

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Abstract

With the advent of 3D printing technologies, the development of new structural parts from engineering applications has increased rather than just prototyping. The current paper focusses on different PETG based samples. Different process parameters by Fused Deposition Modelling were used to print the carbon fibre reinforced samples. The effect of the carbon addition on the mechanical properties such as tensile and flexural behaviour was studied. Further, the effect of these properties on the friction and wear behaviour of these materials was studied. SEM analysis of these samples was done to study the worn surface morphologies and the modes of fracture in the various mechanical tests. The research concluded that addition of the carbon substantially helps to improve the mechanical and tribological behaviour of these materials.

Biography

Dr. Mir Irfan Ul Haq is an Assistant Professor at the School of Mechanical Engineering, Shri Mata Vaishno Devi University. He has previously worked at the R&D wing of Mahindra and Mahindra. He obtained Master of Engineering in Mechanical System Design (Gold Medalist) from National Institute of Technology Srinagar. He has carried out Ph.D. in the area of tribology at SMVD University. He is actively involved in teaching and research in the field of materials, tribology and 3D printing. His research interests include lightweight materials,

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