

# MECHANICAL AND STRUCTURAL CHARACTERISTICS OF FUSED DEPOSITION MODELING ABS MATERIAL

D. Shabat<sup>1</sup>, Y. Rosenthal<sup>1</sup>, D. Ashkenazi<sup>2\*</sup>, A. Stern<sup>1,3</sup>

<sup>1</sup>Department of Mechanical Engineering, Afeka Academic College of Engineering, Tel Aviv, 6910701, Israel

<sup>2</sup>School of Mechanical Engineering, Tel Aviv University, Ramat Aviv 6997801, Israel

<sup>3</sup>Department of Materials Engineering, Ben-Gurion University of the Negev, Beer Sheva 8410501, Israel

\*Corresponding author's e-mail address: dana@eng.tau.ac.il

## ABSTRACT

*The popularity of additive manufacturing (AM) processes for producing three-dimensional objects has significantly increased in recent years, and continues to accelerate in popularity for homemade and industrial applications. In this experimental study, the mechanical and structural characterisation of fused deposition ABS modeling material was performed by visual testing, light microscopy investigation and mechanical testing. The test results revealed different mechanical properties (stresses and displacements) as well as different fracture surfaces, according to the building strategies. The results of this study provide quantitative estimates for the mechanically significant features, as a function of some AM-FDM process variables, for the ABS polymer.*

**KEYWORDS:** Additive Manufacturing, 3D printing, FDM, ABS, mechanical properties, fracture surface, bending test

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