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Aerospace Engineering Thesis Seminar

February 15th | 11:10 AM | 192 322

The Effect of Atomic Oxygen on As-Printed Additive Manufacturing Components

Additive manufacturing (AM) is a rapidly developing and influencial manufacturing method utilized in niche fields like the aerospace industry. In-space additive manufacturing is a technology of interest for the future of spaceflight, allowing for spacecraft components to be built within the space environment. AM materials have different properties than their conventionally manufactured counterparts, and how these differences change the material's reaction to the space environment has not been explored. Effects from atomic oxygen (AO) are some of the most detrimental to spacecraft mission success. The focus of this thesis is to experimentally determine erosion data as a result of AO for additively manufactured materials created using various AM techniques. This seminar will describe the intersection of AO and AM, the methods utilized to test AM samples, and the current results of testing.