

3D PRINTING CONFERENCE INNOVATION, MODELLING, APPLICATION & IMPLEMENTATION

October 05-06, 2017 | Las Vegas, USA

Additive manufacturing of near-net-shape NdFeB magnets – prospects and challenges

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The main goal of this research is to minimize the critical materials waste associated with NdFeB based permanent magnet manufacturing and reduce the overall cost. One of the ways in which we can achieve this goal is by using additive manufacturing techniques to create different shapes and complex geometries of bonded magnets without the need for tooling. We have recently demonstrated the fabrication

of near-net shape magnets with complex geometries and high energy product using > 65 vol % MQP NdFeB nylon composites using Big Area Additive Manufacturing System. We will report in detail about the relationship between the processing, microstructure and property of additively printed bonded magnets.