Sinteneering Innovations

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To Whomsoever Concerned

This is to certify that **Nidhish Sagar** has successfully completed his 1st year (B.S.) summer internship at INTECH DMLS Pvt. Ltd., Bangalore. His tenure was for the duration, 14th of May - 14th of July 2018.

Nidhish worked in laser additive manufacturing of two different alloys used in the Aerospace and Healthcare sectors during his internship on,

"Characterization and Mechanical Properties of Direct Metal Laser Sintered (DMLS) CoCrMo and SS316L in the As printed and Heat-Treated Condition"

Nidhish' s research study dealt with establishing the baseline characterization of popular direct metal laser sintered (DMLS) alloys, CoCrMo and SS316L, as a precursor to developing 3D printed scaffolds for examining superior osteo integration for in-vivo medical Implants. Within the first week of joining Nidhish was able to have a quick grasp of the subject, engage in conversations within colleagues in various groups at IISc, as well as with global experts, and was able to learn and demonstrate proficiency in hands on metallography, including establishing etching of a very hard to etch alloy. He was also enterprising in being able to resource, during the short span of 6 weeks, various characterization and heat treatment facilities, to get the work accomplished in a very timely manner, from more than a dozen different characterization and testing laboratories at IISc. In particular, his initiative to self-learn and get certified as an independent user of a sophisticated characterization equipment, the Scanning electron microscope is commendable.

His eagerness to demonstrate hands on skills as well as technical understanding of XRD, microhardness, Image analysis, Microscopy (Optical and SEM), Surface Roughness and Mechanical testing was well appreciated by over half a dozen senior graduate students at IISc with whom he managed to quickly interact with, during his internship. Nidhish has also been able to carry out some preliminary analysis of 3D printed scaffolds (for prospective cell culture studies) using X-ray tomography.

The two comprehensive reports on both the DMLS alloys, CoCrMo and SS316L, will serve as a valuable reference and will be published in the internal INTECH archival records, as well as serve as a key report to be shared with customers. They will also be presented in an upcoming international conference.

All the characterization carried out by Nidhish was done at the Materials engineering department and the Advanced facility for microscopy and microanalysis at the Indian Institute of Science, Bangalore, facilitated by Prof. Suryasarathi Bose. We wish Nidhish the very best in all his future endeavours.

Dr. Dheepa Srinivasan
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