Overview MAIA Project

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MAIA " Materiali Avanzati in una Infrastruttura Aperta" is an Italian project financed by Regione Lazio and co-funded by ENEA in the framework of Research Infrastructure program. This program was focused on improving a local network of infrastructures aimed at the transfer of technological innovation. The project aims to realize an infrastructure focused on Advanced Material by Additive Manufacturing considering the whole aspects related to these processes. On one side the infrastructure will be involved in advanced R&D service contracts to the industries, while on the other side it will be available for public research projects.

The infrastructure is going to be realized in ENEA's Casaccia Research Center, located near Rome, and managed by the department Sustainibility, and integrate in the Division Sustainable Materials. The project considers all the steps of AM, from synthesis and characterization of advanced materials to printing and post-processing processes. Some equipment of the infrastructure have just been installed and quite all tenders procedures have been completed. The equipment which will complete the infrastructure are: an Electron Beam Melting machine, Arcam X2A from GE, for metal deposition, based on powder bed process, a 3D printer for metal printing starting from polymeric composites, based on ADAM or BMD processes, a new extruder for composites preparation, an Hot Isostatic Press (HIP) for post processing of metallic and ceramic components, equipment for mechanical treatments of materials. Material and component characterization (microstructural analysis, non-destructive and mechanical tests) facilities are present together with specific software for alloy design. In this presentation an overview of the infrastructure and the progress of the project will be exposed.