CCMX Winter School - Additive Manufacturing of Metals and the Material Science Behind It

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Cursus
Science et génie des matériaux
Sem. Obl.

Language English
Credits 2
Session Oral presentation
Exam
Workload 60h
Hours 28
Lecture 20
Exercises 8
Number of positions 24

Frequency
Every year

Summary
This course is designed to cover a series of important scientific aspects related to the field of additive manufacturing of metals and alloys and to provide an in-depth review of corresponding fundamentals. It features 9 modules consisting of presentations given by lecturers and the participants.

Content
Please find information on the link below.

Keywords
Additive manufacturing, metals, atomistic modelling, rapid solidification, alloys for additive manufacturing, in situ experiments,
Laser/e-beam - material interactions
Atomistic modelling of solidification in out-of-equilibrium conditions
Fundamentals of rapid solidification
Optimization of alloys for AM
In situ experiments with Xrays and neutrons at large facilities
Post-treatments, microstructure evolutions and properties
EBM processing and contrast with the SLM approach
Important aspects to be considered in industrial applications

The course is organised as a 5 day retreat to allow for extensive informal interactions.

Learning Prerequisites
Required courses
Participants should be educated in materials science and engineering, physics, mechanical engineering or physical chemistry to benefit the most from this course.

Assessment methods
Oral presentation (prepared based upon a series of publications provided by the lecturers)

Resources
Websites