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Post Doc position

Modeling and simulation of microstructure formation during laser processing

Empa is the research institute for materials science and technology of the ETH Domain and conducts cutting-edge research for the benefit of industry and the well-being of society

In our Laboratory for Advanced Materials Processing, we are currently looking for an outstanding candidate for a PostDoc position in the field of

Modeling and simulation of microstructure formation during laser processing

Some of the challenging issues related to the laser-based metal processing such as additive manufacturing or laser welding are the very high heating and cooling rates and large thermal gradients, resulting in non-equilibrium microstructures. In our laboratory, the understanding of the phase transformations and the microstructure formation (nucleation and growth of grains/precipitates, texture formation etc.) in metal alloys under these special consolidation conditions as well as the development of novel alloys are of particular interest. For this, we combine computational methods such as CALPHAD, finite elements and phase field with sophisticated experiments.

The successful candidate should have a PhD degree in Materials Science, Physical Metallurgy, Applied Physics, Engineering or Materials Chemistry as well as a deep background in thermodynamics/kinetics of phase transformations in metal alloys as documented by a strong publication track record in this field. Experience with the above mentioned modeling and simulation techniques is expected, programming skills are beneficial.

A strong desire to work at the leading edge of materials technology and a high level of motivation to work in an international, multidisciplinary research team in the field of materials science are essential. The candidate should have a clear interest to work in an application-oriented research environment in close-collaboration with our industrial and academic partners. Good communication, presentation, and publication skills in English are mandatory. Knowledge of German would be an advantage. The full-time position is limited to two years and is available from 1st October 2018 or upon agreement. The candidate is expected to participate in the EMPAPOSTDOCS II program (<https://www.empa.ch/web/empa/empapostdocs-ii>).

Applications including a motivation letter, CV, diplomas with transcripts of records as well as the contact details of two potential referees can be sent by e-mail to Dr. Christian Leinenbach, Head Alloy Design for Advanced Processing Technologies (ADAPT) (christian.leinenbach@empa.ch).