ABOUT THE PROJECT

The R&D infrastructure funding initiative by the Austrian Research Promotion Agency (FFG) is designed to strengthen the basis for excellent research in Austria for companies, universities and research institutions, thereby improving the international positioning of Austrian research.

The R&D infrastructure funding of the FFG supports projects for the acquisition and construction of high-quality R&D infrastructure for basic research as well as for application-oriented research.

Funding is provided for the acquisition costs for R&D infrastructure as well as start-up costs that serve to build up the R&D infrastructure until it can be put into normal operation.

WO AUS FORSCHUNG ZUKUNFT WIRD

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OPENING CELEBRATION

ATOM PROBE LEAP 5000
at the Department of Materials Science

Monday, 03. October 2022

INVITATION

ATOM PROBE LEAP 5000
at the Department of Materials Science

As part of the 3rd call for R&D infrastructure funding from the Austrian Research Promotion Agency (FFG), a proposal was submitted from the Department of Materials Science for the funding of a latest-generation atom probe.

Atom probe tomography is one of the most important high-resolution characterisation methods in materials science. For the development of novel materials and material systems, atom probe tomography, in combination with experimental and quantum mechanical design approaches, is used to investigate the effect of alloying elements, point defects, dislocations, crystalline and amorphous phases and interfaces on the stability and properties of materials and to further improve them. Currently, research is focused on structural and functional metallic materials. Other non-metallic functional materials and material systems, e.g. high-performance ceramics and metal-polymer systems used in electronics, are also an active area of research at the Department of Materials Science.

The atom probe microscope of the type LEAP 5000 from the company Cameca Instruments makes it possible, through the use of a UV laser, to open up new areas of application for complex structural and functional materials, for example in micro- and nanoelectronics. The new UV laser enables also the possibility of investigating non-conductive ceramic and geological materials. The greatly increased detector efficiency allows completely new insights into the chemical composition as well as the atomic structure. In combination with correlative techniques such as transmission electron microscopy and ab-initio calculations, new material developments and knowledge-based design of their properties will be possible.

The funding of the new LEAP 5000, as part of the R&D infrastructure funding of the FFG, enables the Department of Materials Science in Leoben to continue to act as a centre for atom probe tomography in Austria, as well as to distinguish itself in international competitiveness in the field of materials science.

Monday, 03. October 2022

MONTANUNIVERSITÄT LEOBEN, SITZUNGSZIMMER DER UNIVERSITÄTSLEITUNG, 1. FLOOR
FRANZ-JOSEF-STRASSE 18, 8700 LEOBEN

PROGRAMM

13:00 UHR START/ARRIVAL

13:15 UHR WELCOME + TALKS

Univ.-Prof. Dr. Ronald Schnitzer, Montanuniversität Leoben
“Atom probe tomography in Leoben – history and research example”

Dr. Michael Tkadletz, Montanuniversität Leoben
“Correlative microscopy techniques for atom probing functional films and coatings”

Prof. Dr. Peter Felfer, FAU Erlangen
“Atom probe tomography of hydrogen“

14:45 UHR COFFEE BREAK

15:15 UHR FURTHER TALKS

Katherine Rice, Cameca Instruments
“Atom probe tomography: historical overview and select applications”

Univ.-Prof. Dr. Stefan Pogatscher, Montanuniversität Leoben
“In-situ experiments on aluminium alloys via atom probe tomography and transmission electron microscopy”

Dr. Anna Jelinek, Montanuniversität Leoben
“Atom probe tomography and segregation analysis for structural materials”

AFTERWARDS THERE WILL BE THE POSSIBILITY TO VISIT THE LABORATORY AND TO HAVE DISCUSSIONS AT A BUFFET

PARTICIPATION

Participation is free of charge.
For organizational reasons we kindly ask you to register at materials@unileoben.ac.at by 26. September 2022.