

Press Release

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New partner group on high-performance materials at MPIE

Max Planck Society funds Slovenian-German research group

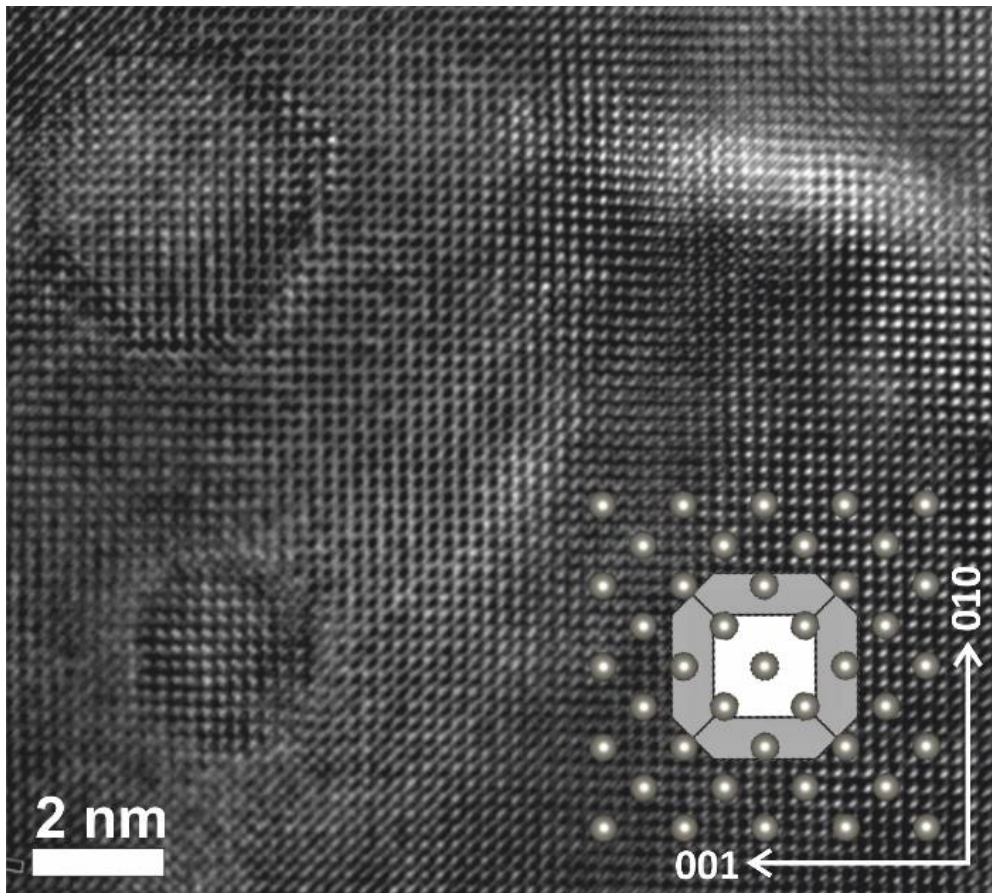
Dr. Janez Zavašnik, researcher at the Jožef Stefan Institute (JSI) and assistant professor at the Jožef Stefan International Postgraduate School in Ljubljana (Slovenia), was awarded by the Max Planck Society for his outstanding research with 100.000 euros for the next five years. This award enables him to build up a new partner group at the Max-Planck-Institut für Eisenforschung (MPIE).

The new group led by Dr. Zavašnik and Andreja Šestan, PhD student at JSI and former guest researcher at MPIE, aims to advance the performance of materials exposed to simultaneous gas loading and high temperatures as in applications for future fusion reactors and the hydrogen economy. “My research aims to unravel the role of the microstructure evolution and its influence on the gas-solids interaction. Through the understanding of precipitation, defects, interfaces and grain boundaries, we aim to design a microstructure, capable of better tolerating helium and hydrogen atoms and thus prevent damage.”, explains Zavašnik. The new group is established in the department “Structure and Nano-/Micromechanics of Materials”, headed by Prof. Gerhard Dehm.

Zavašnik obtained his bachelor’s degree from the University of Ljubljana (Slovenia) in 2009, where he analysed the formation and crystallography of iron sulphides. He complemented his PhD in 2013 at the Jožef Stefan International Postgraduate School where he investigated twinning and phase transformations in iron sulphides. After his PhD, he ran the transmission electron microscopy laboratory at the Centre for Electron Microscopy and Microanalysis (JSI), and in 2017 he joined the department of Prof. Dehm at MPIE, as a guest researcher. Since 2019, Zavašnik is working as a senior researcher at JSI, the largest and leading research facility in Slovenia.



Dr. Janez Zavašnik and Andreja Šestan from the Jožef Stefan Institute in Ljubljana (Slovenia), will lead the new partner group on high-performance materials at MPIE.
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A transmission electron microscopy image of tungsten single-crystal with faceted helium voids, interrupting the tungsten crystal lattice. Copyright: Janez Zavašnik, Jožef Stefan Institute

The international team of the Max-Planck-Institut für Eisenforschung conducts advanced basic materials research for the fields of mobility, energy, infrastructure, medicine and digitalisation. The focus lies on nanostructured metallic materials as well as semiconductors, which are analysed down to their atomic and electronic scales. This enables the MPIE team to develop new, tailor-made structural and functional materials embracing their synthesis and processing, characterisation and properties, as well as their response in engineering components exposed to real operating environments.

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