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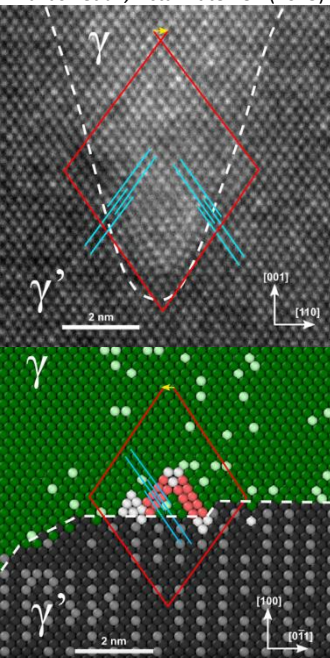
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Grenoble University (Fr)

Prakash et al., Acta Mater. 92 (2015)



Minicolloquium

Advanced materials – MP4

Influence of micro-/nanostructures on plasticity: interplay between experiments and simulations

Scope:

Thermo-mechanical properties of materials are strongly related to their micro- and/or nanostructures. Multi-scale approaches are required for shedding new light on complex physical phenomena such as phase transformation, hardening, plastic deformation, etc. More specifically, with the on-going understanding of the relation between plastic properties of materials and their micro-/nanostructures, there is an increasing need for strong synergy between experiments and simulations. For instance as typical experiments, one could mention *in-situ* small scale mechanical testing and detailed micro-/nanostructure analyses with electron microcopies and/or diffraction. Crystal-plasticity finite elements methods and classical atomistic simulations are also well established for studying micro-/nanostructures of materials from the numerical point of view. The constant improvements —accuracy, size and time scale, etc.— of both experimental techniques and simulations methods lead to a growing interplay between these two approaches in materials Science.

This mini-colloquium intends to present the last advances on the influence of micro-/nanostructures on materials plasticity studied by combining both experiments and simulations. A special care will be given to contributions highlighting promising synergy between experiments and simulations. Contributions involving models development in the framework of experimental studies are also welcome.

Talk: 15 min (including discussion)

Invited talk: 30 min (including discussion)

Language: English (preferred) or French

Invited speaker:

- Thomas Pardoen (Université Catholique de Louvain)

Registration on the conference website: jmc15.sciencesconf.org

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Important dates:

April 15th 2016 – deadline for student grant application

May 1^{er} 2016 – end of abstract submission for oral and poster presentation