

Hydrogen in Materials:Process-Microstructure-Properties Relationships

Lecture:

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Title:

Hydrogen in Materials:Process-Microstructure-Properties Relationships

Target Audience:

Those who are interested in the topic (researchers, students, etc.)

Date and Time:

(Thu), February 29, 2024, 18:00–19:00 (JST)

Venue:

Online (zoom)

CHEN QU S. Orimo (Tohoku Univ) Astrid Pundt qianwang Enlihanfeng Cheng p3u000145

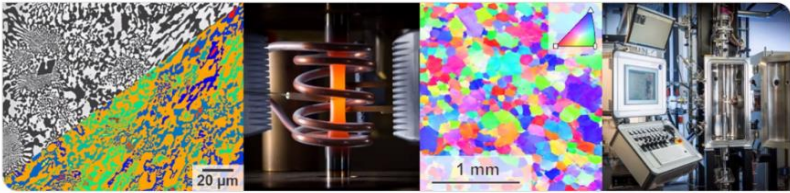
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Karlsruhe Institute of Technology

IAM
Institute for Applied Materials

Process-structure-property relationships in systems with reduced dimensions

Institute for Applied Materials – Materials Science and Engineering

Prof. Dr. Astrid Pundt – Hydrogen in Materials



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Bulk metal-hydrogen systems

Sieverts law: $S_{\text{H}} = S_{\text{H}}^0 \sqrt{p_{\text{H}_2}}$ (solid solution)

Isotherm: Pd-H 27 °C

Hydride-phase

Solubility limits

Phase diagram

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Maki SUEMITSU

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Kei OKAMOTO

Hydrogen and micro structure

Interstitial lattice sites (a)

surface (b)

sub-surface (c)

vacancies (d)

grain boundaries (e)

edge dislocations (f)

affect H-solubility limits

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