Program of the 181st ISIJ Meeting (March 17-19, 2021)

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Discussion Sessions

Processing for Quality Products

Processing for Quality Products

Microstructure and Properties of Materials

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International Organized Sessions

Committee for Social Relations with Iron and Steel Sector
2021/3/18 Room 1

Current developments in nondestructive analysis using synchrotron radiation, neutron, and muon
-Towards application of cultural heritage research-

12:30-12:35
Opening Address: T. Nakanishi [Kyushu Univ.]

Chair: A. Sato [Osaka Univ.]

12:35-13:05
Int.-1 (Invited Lecture) Current developments of neutron scattering measurements for steel research
National institute of Advanced Industrial Science and Technology ○Y. Tomota ・・・ 58*

13:05-13:25
Int.-2 Archaeometallurgy of Japanese sword using neutron diffraction
JAEA ○S. Harjo・K. Oikawa・T. Kawasaki, IFAC-CNR F. Grazzi, JAEA T. Shinohara,
Showa Women's Univ. M. Tanaka ・・・ 60*

13:25-13:45
Int.-3 Development of high-energy X-ray microtomography at spring-8: current status and application to metallic cultural heritage
Japan Synchrotron Radiation Research Institute ○M. Hoshino・K. Uesugi・N. Yagi ・・・ 67*

13:45-14:05
Int.-4 Nondestructive study of Japanese swords using synchrotron x-ray computed tomography to elucidate sword-making techniques
Showa Women's Univ. ○M. Tanaka, Gifu Prefectural Industrial Technology Center Y. Mizutani,
Japan Synchrotron Radiation Research Institute M. Hoshino・K. Uesugi ・・・ 70*

Chair: Y. Matsui [Kobelco Research Institute]

14:15-14:45
Int.-5 (Invited Lecture) Integration of arts and sciences by using negative muon nondestructive analysis at J-PARC MUSE
High Energy Accelerator Research Organization ○Y. Miyake・M. Tampo・S. Takeshita・
K. Shimomura・P. Strasser・S. Doiuti ・・・ 72*

14:45-15:05
Int.-6 Non-destructive elemental analysis of archaeological metal materials using muonic X-rays
Okayama Univ. ○K. Minami, Osaka Univ. A. Sato・K. Ninomiya,
International Christian Univ. K. Kubo, Osaka Univ. D. Tomono・Y. Kawashima ・・・ 73*

15:05-15:25
Int.-7 Non-destructive identification of carbon content in iron product by muon lifetime measurement
Osaka Univ. ○K. Ninomiya ・・・ 74*

15:25-15:45
Int.-8 Development of an in-museum non-destructive elemental analysis with cosmic-ray muons for cultural heritage
Osaka Univ. ○A. Sato ・・・ 76*

Chair: J. Kawai [Kyoto Univ.]

15:55-16:25
Int.-9 (Invited Lecture) Comprehensive, neutron-based characterization of cultural heritage objects at the Budapest Neutron Centre, Hungary
Budapest Neutron Centre ○L. Szentmiklosi・Z. Kis・B. Maroti・Z. Kasztovszky・I. Harsanyi・K. Bajnok ・・・ 61*

16:25-16:55
Int.-10 (Invited Lecture) Combining MA-XRF and OCT in the investigation of the dark background of Vermeer's Girl with a Pearl Earring
Delft Univ. of Technology ○J. Dick・G. Harteveld・T. Callewaert・J. Kalkman,
Mauritshuis A. van Loon, Rijksmuseum A. Vandivere ・・・ 71*

16:55-17:25
Int.-11 (Invited Lecture) The use of neutrons in the study of historical copper alloys and sculpture at the rijksmuseum
Rijksmuseum ○R. van Langh ・・・ 64*

17:25-17:30
Closing Address: M. Tanaka [Showa Women's Univ.]

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High Temperature Processes

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Sustainable Systems

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Instrumentation, Control and System Engineering

Processing for Quality Products

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Microstructure and Properties of Materials

Heat resistant steels and alloys 2

Hydrogen embrittlement 1

Hydrogen embrittlement 2

Hydrogen embrittlement 3

Hydrogen embrittlement 4

Grain boundary and grain boundary segregation

Diffusional phase transformation

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Prediction and modeling of metallurgical phenomena and properties 1

Prediction and modeling of metallurgical phenomena and properties 2

Strength and deformation behavior 5

Toughness and ductility

Process Evaluation and Material Characterization

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Crystal structure analysis

Elemental analysis

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ISIJ and JIM Joint Sessions