CentraleSupélec

université PARIS-SACLAY

PROGRAM

5th International Workshop on Laser-Ultrasound for Metals

5-6 May, 2022, Gif-sur-Yvette, France

LUS4Metals

The 5th International Workshop on Laser-Ultrasound for Metals (LUS4Metals) will be held at CentraleSupélec (Paris-Saclay University, in the southern suburbs of Paris, France) from May 5 to 6, 2022, in following on from previous workshops held at the University of British Columbia (Canada, 1st and 2nd), the metals research institute Swerim AB (former Swerea Kimab, Sweden, 3rd), and Recendt in Linz (Austria, 4th).

This event will once again open to all interested parties from academia and industry. The small to medium size of the workshop will allow dynamic and fruitful exchanges between the attending researchers and industrial partners from all over the world around topics of Laser-Ultrasound Testing, modelling and simulation, from fundamental aspects to challenging

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Thursday, 5th May 2022

08 : 00	Registration and Welcome Reception
08 : 30	**Pierre-Alain Boucard**, Director of LMPS (CentraleSupélec, ENS Paris-Saclay), France Opening
08 : 40	**Christophe Bescond,** Invited speaker, NRC Canada, Boucherville, Qc, Canada Recent developments at NRC Canada for steel microstructure characterization and weld inspection
09 : 20	**Bevis Hutchinson**, Swerim AB, Stockholm, Sweden High precision measurement of elastic anisotropy in metals
09 : 40	**Krister Ekström**, Swerim AB, Stockholm, Sweden Recrystallization kinetics of Fe-30Ni alloy with 0.008-0.083% Nb
10 : 00	**Philip Meilland**, ArcelorMittal Maizieres Research, France Assessment of grain size on moving steel strips during hot rolling with Laser ultrasonics
10 : 20	**Pavla Stoklasová**, Institute of Thermomechanics, Czech Academy of Sciences Laser-Ultrasonic Characterization of Omega Particles in Ti15Mo
10 : 40	Coffee Break
11 : 00	**Paul Dryburgh**, OPG, University of Nottingham, UK SRAS++ for single-crystal elasticity measurements in polycrystalline material
11 : 20	**Kristýna Zoubková**, Institute of Thermomechanics, Czech Academy of Sciences Fake anisotropy of thermal diffusivity from transient grating spectroscopy measurements
11 : 40	**Xin Tu**, Dep. Mech. Engin., University of Bristol, UK Radial position independent directivity for laser generated ultrasonic shear waves in thermoelastic regime
12 : 00	**Marc Choquet**, Sponsor Presentation, Tecnar Automation Ltée, Canada
12 : 15	**Bruno Pouet,** Sponsor Presentation, Sound & Bright, California, USA **Christelle Anceau,** Opton Laser Int., France
12 : 30	Lunch Break
14 : 00	**Peter Huthwaite**, Invited speaker, Imperial College, London, UK High speed modelling of waves with the finite element method
14 : 40	**Mathieu Ducousso**, SAFRAN Tech, France Laser ultrasonics in a multilayer structure: semi-analytic model and different examples
15 : 00	**Tomáš Grabec**, Institute of Thermomechanics, Czech Academy of Sciences Grain-boundary scattering of surface acoustic waves: experiment and simulation
15 : 20	**Bing Tie**, LMPS, CentraleSupélec, ENS Paris-Saclay, CNRS, France Numerical Investigation of ultrasonic scattering phenomena at the grain-scale in polycrystalline materials
15 : 40	**Pierre-Emile Lhuillier**, EDF R&D, France Modeling method for the simulation of austenitic weld ultrasonic inspection - realistic prediction of echoes and structural noise in weld inspection
16 : 00	Coffee Break
16 : 20	**Nicolas Legrand**, ArcelorMittal Global R&D, East Chicago, USA 1) Pearlite monitoring in steel Sheets by laser ultrasonic technique 2) Comparative Analysis of Phase Transformation Monitoring by Dilatometry and by Laser Ultrasound.
16 : 50	**Mariana Rodrigues**, University of British Columbia, Vancouver, Canada In-situ laser ultrasonic measurements of phase transformation kinetics in lean Ti-Mo alloys
17 : 10	**Anton Jansson**, Swerim AB, Stockholm, Sweden Laser ultrasonics for quality control of resistance spot welding
17 : 30	**Matthew Riding,** DEEE, University of Strathclyde, Glasgow, UK **[Poster]** Acoustic velocity mapping of multi-metallic components using laser-induced ultrasonic time-of-flight tomography and neural data interpretation
17 : 40	**Edouard Demaldent**, Sponsor Presentation, CEA List, LSMA, France Physic-based modelling for ultrasonic testing in complex materials at CEA List
18 : 10	Group Photo | 18 : 30 Bus Meeting
18 : 45	Bus Start | 19 : 00 Dinner

Friday, 6th May 2022

08 : 00	Welcome Reception
08 : 30	**Edgar Scherleitner**, Invited speaker, RECENDT, Linz, Austria The potential of laser ultrasound for sustainability in metal production and processing
09 : 10	**Mikael Malmström,** Swerim AB, Stockholm, Sweden On-line grain size gauge for the hot strip mill based on laser ultrasonics
09 : 30	**Mathieu Ducousso**, SAFRAN Tech, France Ultrasonic bulk imaging of shock wave spatial distribution in opaque solids
09 : 50	**Peter Lukacs**, University of Strathclyde, Glasgow, UK Laser Ultrasonic Tomography using Deep Neural Networks
10 : 10	**Panagiotis Kamintzis**, University of Strathclyde, Glasgow, UK Surface acoustic wave suppression for ultrasonic imaging of near-surface defects using laser induced phased arrays
10 : 30	Coffee Break
11 : 00	**Gildas Guillemot**, CEMEF, MINES ParisTech, PSL Research University, France Grain structure modeling in fusion welding processes using a coupled CAFE approach - Application in NDT methods
11 : 20	**Alverède Simon**, CEA List, LIC, France Analysis of the effect of inline laser-induced ultrasonic waves on the microstructure of materials processed in laser powder bed fusion conditions
11 : 40	**Ronan Delalande**, LAUM and INSP, France Determining elastic properties of a single metallic nanoparticle using time-resolved ultrafast spectroscopy
12:00	**Frédéric Faese**, NETA SAS, France Thin film characterization by picosecond ultrasonics on high curvatures surfaces
12 : 20	Closing Ceremony and LUS4Metal 2024 organization
	Bing Tie, LMPS, CentraleSupélec, ENS Paris-Saclay, CNRS, France **SWERIM AB** next LUS4Metals and MDPI Applied Sciences Special Issue
12 : 30	Lunch Break

There will be no call for papers at the workshop. Workshop participants interested in publishing a full-length paper may consider submitting it in the **MDPI Applied Sciences Special Issue ``Application of Laser-Ultrasonics in Metal Processing"**, edited by our colleagues at Swerim AB.
https://www.mdpi.com/journal/applsci/special_issues/Laser_ultrasonics_in_Metal_Processing

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Organizing committee

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