MISSION

Instrumented indentation test (IIT), since its inception in 1992, has progressed rapidly as a valuable research tool in academy and Industry. This workshop is intended to expand the use of IIT in industry while promoting its scientific and technological development. This technique is unique in that it is non- or semi-destructive, it requires quick preparation of the sample and can be portable or can be miniaturized to embed into FESEM devices. A large variety of materials in the rolled, forged, extruded, casted products can be potentially tested either in-line or off-line production. IIT on thin films, coatings and multilayers is already established. The determination of the performances of welded joints and additively manufactured components are under investigation at nano-, micro- and macroscale. IIT's transfer into industrial environment will allow unprecedent rapid setup of the manufacturing process as well as in-line tailoring and optimization of material properties to meet specific industrial applications.

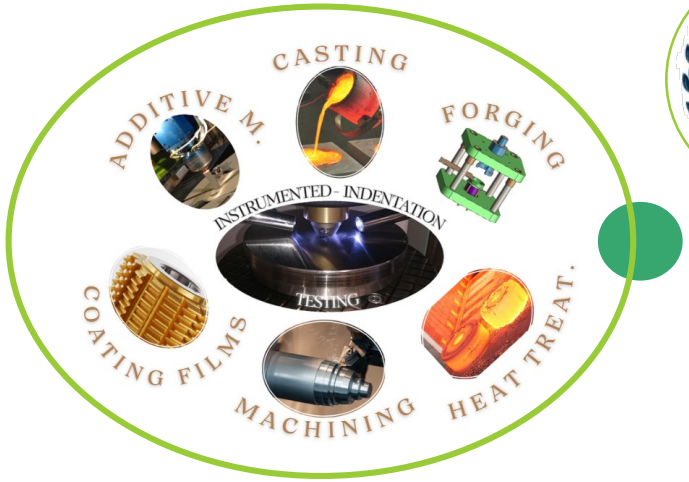
This second WIIT-Industry is organized by the research group of **Materials Processing & Design** group of Politecnico di Torino with the collaboration of Alemnis (Thun, Switzerland), Anton Paar Italy, and the Italian Institute of Metallurgy (AIM). It includes one-day oral presentations on various aspects of IIT of interest to materials science and industry. Renowned scientists and experts in the field have been invited as speakers.

The participation to the event is free of charge and open to beginners and trained scientists from university, research labs and industry.

Pre-registration with doodle by Nov. 22, 2024 is recommended

2nd Workshop on Instrumented Indentation Test for Industry - WIIT-Industry 2024

November 28, 2024, Torino



alemnis

AIM

Organized by:

Politecnico di Torino

DISAT, Department

with the collaboration of:

Alemnis, Anton Paar and AIM

INVITED ORAL PRESENTATIONS

Workshop Chair: prof. Giovanni Maizza

9:00-9:05 prof. **Giovanni Maizza**, *Opening*

9:05-9:25 Dr. **Nicholas Randall**, Alemnis, Switzerland
In situ extreme micromechanics – Recent innovations and prospects

9:25-9:45 Dr. **Alessandro Schiavi**, Istituto Nazionale di Ricerca Metrologica, INRIM, Italy
Macro Instrumented Indentation Test: Elastoplastic properties of metals and alloy determined from primary Vickers Standard machine for industrial applications

9:45-10:10 prof. **Takahito Ohmura**, National Institute of Materials Science, NIMS, Tsukuba, Japan
Nanomechanical characterization and physical modeling in metals

10:10-10:35 Dr. **Thomas Chudoba,** ASMEC GmbH, Dresden, Germany
Mechanical surface characterization 2.0: What else can you do with a modern nanoindenter

10:35-10:55 Dr. **Faisal Hafez**, DISAT, Politecnico di Torino
The performance-line nanoindentation testing (PL-nIIT): Basic principle and application to a LB-PBF SS 316L part

10:55-11:30 Coffee Break

11:30-11:50 Dr. **Simone Marchesi**, Anton Paar, Italy
Micro and Nanoindentation for thin films characterization

11:50-12:10 prof. **Roberto Montanari**, Industrial Engineering Dept., University of Rome Tor Vergata, Italy
Mechanical characterization by FIMEC and its applications to engineering materials

12:10-12:30 Dr**. Tijmen Vermeij, EMPA,** Materials and Technologies, Switzerland
Recent developments on in-situ nano- and micromechanical testing using advanced electron diffraction techniques

12:30-12:50 Prof. **Maria José Marques**, University of Porto, Faculty of Engineering, Portugal
Residual stress evaluation by XRD and IHD in SLM manufactured AISI 316L steel samples.

12:50-13:30 Questions & Concluding Remarks

AGENDA

Registration and Workshop venue

08:00 - November 28, 2024

DISAT, Entrance n.3, Aula Denina, Politecnico di Torino

Corso Duca degli Abruzzi, 24, 10129, Torino

Pre-registration by Doodle Link:

https://doodle.com/sign-up-sheet/participate/c9f7b39c-4938-4205-b115-c4f7d33bcc4d/select

Info & Contact

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