



UNIVERSITY OF TRENTO - Italy  
Department of Industrial Engineering



2<sup>nd</sup> Workshop **Materials Characterisation by the Combined Analysis**  
and **Raw Materials Applications Day**  
November 26-30, 2018, Trento (Italy)

**ThermoFisher**  
SCIENTIFIC



Monday (Contamination lab. - Trento) <i>Rietveld analysis</i>	Tuesday (Contamination lab. - Trento) <i>Microstructure and nanostructured materials</i>	Wednesday (Povo) <i>Diffraction, Reflectivity and Fluorescence combined</i>	Thursday (Contamination lab. - Trento) <i>Electron diffraction and analyses</i>	Friday (Contamination lab. - Trento) <b>Raw Materials Applications Day</b>
9h <b>Welcome</b>  <b>Introduction: Beam-Matter interaction</b> (Giancarlo Pepponi, FBK, Italy)	9h <b>Microstructure analysis (texture)</b>  <b>Part I: theory Part II: case studies</b> (Daniel Chateigner, CRISMAT-ENSICAEN, France)	9h <b>Fluorescence: XRF and GIXRF analyses (2 parts)</b> (Christina Strelj, TU Wien, Austria)	9h <b>Analytical Electron Microscopy</b>  <b>Part I: Introduction Part II: Electron Diffraction</b> (Stefano Gialanella, DII-UNITN)	9h <b>Microstructure analysis III: examples and application to geology</b> (Juan G. Barreiro, Salamanca Univ.) <b>Mineralogical &amp; chemical on-line drill core analyses: resource efficiency in the mining industry</b> (Beate Orberger, Paris-Sud Univ.)
~10h45 / 11:15h : coffe break				
<b>Part I: Classical Rietveld Analysis Part II: Quantitative Phase Analysis</b> (Luca Lutterotti, DII-UNITN, Italy)  <b>Short COD demo</b> (Saulius Grazulis, Vilnius Univ, Lituania)	<b>From crystallite size and microstrain to Rietveld-PDF analyses</b> (Luca Lutterotti)  <b>Crystallography Open Database</b> (A. Merkys, A. Grybauskas, S. Grazulis, Vilnius Univ, Lituania)	<b>Combining Diffraction, Reflectivity and Fluorescence analysis in thin films (2 parts)</b> (Giancarlo Pepponi)	<b>Combined Electron Microscopy</b> (Stefano Gialanella)  <b>Analysis of Electron Diffraction Ring Patterns</b> (Luca Lutterotti)	<b>Borehole geophysical logging: innovative tools and solutions for mineral exploration. Innolog project</b> (Maria J. Jurado, CSIC Barcelona) <b>Photonic for in situ monitoring in the mine exploration</b> (Salvatore Siano, CNR Firenze)
~13h / 14:15h : Lunch				
<b>Instrumentation and measurements</b> (Christophe Fontugne, INEL-Thermo Fisher Scientific, France)	<b>Practical session: microstructure (size-strain and defects)</b> Hands on Maud (L. Lutterotti)	<b>XRD-XRR-XRF laboratory</b> (DII/FBK labs)	<b>Practical session: working with diffraction images and texture</b> Hands on Maud (L. Lutterotti)	<b>Practical session: combined mineralogical and chemical analyses</b> Hands on Maud (E. Borovin)
~15h30 / 16h : coffe break				
<b>Practical session: Rietveld analysis and Phase Quantification</b> Hands on Maud (L. Lutterotti)	<b>Practical session: nanomaterials and Rietveld-PDF analysis</b> Hands on Maud (L. Lutterotti)	<b>Practical session: XRD, XRR and GIXRF combined analysis on bulk materials and thin films</b> Hands on Maud (Pepponi-Lutterotti)	<b>Practical session: Ring pattern analysis from electron diffraction images</b> Hands on Maud (L. Lutterotti)	<b>Practical session: student's selected case studies</b> Hands on Maud (in groups)
~18h End of the day				
Welcome Dinner (18:00-20:00)			Social Dinner (19:15-)	