



DIPARTIMENTO  
DI GEOSCIENZE

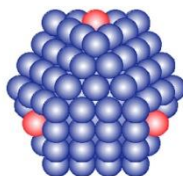


Dipartimento  
di Fisica  
e Astronomia  
Galileo Galilei

DIPARTIMENTO DI  
SCIENZE BIOMEDICHE



UNIVERSITÀ  
DEGLI STUDI  
DI PADOVA



## **Introduction to structural crystallography and diffraction**

**Scuola: Metodi basati sull'uso di raggi X per analisi di molecole e materiali, con particolare enfasi sulla diffrazione di raggi X**

**Date:** 4-8 giugno 2018

**Ubicazione:** Dip. Geoscienze. Via Gradenigo 6, 35131 Padova – Aula 1 C-D

**Scuola per dottorandi** di 5 giorni (40 ore)

**Accreditamento:** 3 crediti

**Costo:** Studenti/Dottorandi UNIPD: gratuito

Esterni accademici € 200

Esterni aziendali € 500

### **Per iscrizioni ed informazioni:**

contattare Sig. Valeria Turozzi

segreteria CIRCe [circe@unipd.it](mailto:circe@unipd.it)

tel 049-827 9166

### **Per il Pagamento inviare bonifico alla tesoreria AIC**

Causale: "COGNOME NOME, ISCRIZIONE SCUOLA XRPD Padova 2018"

Intestatario c/c: Associazione Italiana di Cristallografia

Bank: UBI Banca

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## Program

	Monday June 4th	Tuesday June 5th	Wednesday June 6th		Thursday June 7th	Friday June 8th
	<b>Basics on X-ray-related methods</b>	<b>X-ray diffraction: basics and methods</b>	<b>Data collection/Structure refinement</b>		<b>Applications</b>	<b>Applications</b>
			<i>powders</i>	<i>Single xl</i>		
09:00-10.30	<b>Interaction RX-matter</b> (P. Fornasini)	<b>Introduction to single-crystal X-ray diffraction</b> (G. Zanotti)	<b>Introduction to Rietveld programs (GSAS)</b> (M.C. Dalconi / M. Ardit)	<b>Single crystal data collection</b> (F. Nestola)	<b>Quantitative analysis</b> (G. Cruciani)	<b>Analysis of disordered materials</b> (M. Leoni)
10.30	Coffee break	Coffee break	Coffee break		Coffee break	Coffee break
10.50-11.35	<b>Photoelectron emission (XPS) and fluorescence (XRF) based methods</b> (S. Gross)	<b>Instruments for Single crystal X-ray diffraction</b> (F. Nestola)	<b>Introduction to Rietveld programs (GSAS)</b> (M.C. Dalconi / M. Ardit)	<b>Single crystal data collection</b> (F. Nestola)	<b>Polymer diffraction (V. Causin)</b>	<b>Introduction to concepts and methods in total scattering</b> (A. Guagliardi)
11.35-12.20	<b>Absorption (XAS)</b> (C. Maurizio)	<b>Introduction to XRPD: X-ray powder diffraction and Instruments</b> (G. Artioli)	<b>Rietveld refinement with GSAS</b> (M.C. Dalconi / M. Ardit)	<b>Single crystal structure refinements</b> (F. Nestola)		
12.20-13.00	<b>X-ray microscopy and tomography</b> (L. Valentini)					
13.00	Lunch	Lunch	Lunch		Lunch	Lunch
14.30-15.15	<b>Basic principles of crystallography</b> (G. Artioli)	<b>The profile of the diffraction peak</b> (P. Scardi)	<b>Rietveld analysis with different programs</b> (GSAS: M.C. Dalconi / M. Ardit)	<b>Rietveld analysis with different programs</b> (GSAS: M.C. Dalconi / M. Ardit)	<b>Databases</b> (M. Leoni)	<b>General discussion</b>
15.15-16.00		<b>Introduction to full pattern analysis</b> (P. Scardi)	<b>(MAUD: L. Lutterotti / M. Bortolotti)</b> <b>(PM2K: M. Leoni)</b>	<b>(MAUD: L. Lutterotti / M. Bortolotti)</b> <b>(PM2K: M. Leoni)</b>	<b>Practical exercises (small groups)</b>	
16:00	Coffee break	Coffee break	Coffee break		Coffee break	Coffee break
16:30-18.00	<b>Basic principles of diffraction</b> (G. Zanotti)	<b>Introduction to ab-initio structure solution methods from powders</b> (N. Masciocchi)	<b>Rietveld analysis with different programs</b> (GSAS: M.C. Dalconi-M. Ardit) <b>(MAUD: L. Lutterotti / M. Bortolotti)</b> <b>(PM2K: M. Leoni)</b>	<b>Rietveld analysis with different programs</b> (GSAS: M.C. Dalconi / M. Ardit) <b>(MAUD: L. Lutterotti / M. Bortolotti)</b> <b>(PM2K: M. Leoni)</b>	<b>Practical exercises (small groups)</b>	