



中國科學院高能物理研究所  
*Institute of High Energy Physics*  
*Chinese Academy of Sciences*

# **Inelastic X-ray scattering 2018: instrumentation and applications**

**Institute of High Energy Physics, Beijing**

**May 10-11, 2018**



# Contents

Overview .....	2
Agenda .....	3
List of participants .....	5
WIFI connection .....	7
Notes .....	8

# Overview

Resonant and non-resonant inelastic X-ray scattering are important tools to study various elementary excitations in condensed matter. Over the past few decades, RIXS and XRS have been developed into relatively mature technologies in third-generation synchrotron radiation sources around the world. Since the HEPS project has been approved recently, it is a good opportunity to introduce these two techniques to China with a brilliant perspective. IXS 2018 will bring together researchers from all over the world working in the field of RIXS and XRS. It will provide a workshop for scientists to present new discoveries and research related to resonant and non-resonant inelastic X-ray scattering, and opportunities to exchange information about the latest technical developments and applications.

A hard X-ray high energy resolution spectroscopy (HXHERS) beamline is being considered for the upcoming High Energy Photon Source (HEPS), which is expected to be built in Beijing, China in next five or six years. Three method NRS, RIXS and XRS are considered and we hope to get advice from experts and users to our HXHERS beamline. In this workshop, the following topics will be covered: 1) important scientific problems that can be addressed by RIXS techniques in various fields like condensed matter physics, chemistry and materials science; user requirements and the design for the RIXS spectrometer. 2) eV-IXS or XRS method and instrument, proposal of the XRS spectrometer. 3) The key optical component, e.g. Analyzer and HRM, R&D efforts and collaborations.

**webpage:** <https://indico.ihep.ac.cn/event/7639/>

# Agenda

May 10 Meeting Room 419, Main Building, IHEP

Time	Topics	Speaker	Chair
09:00-09:10	Welcome remark	Qing Qin	Dongliang Chen
09:10-09:30	The Status of the High Energy Photon Source (HEPS)	Ye Tao	
09:30-10:00	Inelastic X-ray Scattering program at HEPS -partial program on the Hard X-ray High Energy resolution spectroscopy (HXHERS) beamline	Wei Xu	
10:00-10:20	Meeting photo and coffee break		
10:20-10:50	High Energy Resolution Inelastic X-ray Scattering and Applications in Materials Science	Yong Cai	Simo Huotari
10:50-11:20	Source considerations for high-resolution and high-throughput inelastic x-ray scattering	Hasan Yavas	
11:20-11:50	Hard x-ray RIXS applications on iridates, and others	Xuerong Liu	
11:50-13:30	Box Lunch		
13:30-14:00	Design concept of the RIXS end-station at the High Energy Photon Source	Juncai Dong	Yong Cai
14:00-14:40	Valence-electron excitations in condensed matter	Simo Huotari	
14:40-15:20	Anharmonic phonons in energy materials: inelastic x-ray scattering and first-principles simulations	Jiawang Hong	

15:20-15:40	Coffee break		
15:40-16:20	Beamline layout: comments & suggestions	Xu Wei	
16:20-17:00	User Requirements for the beamline and spectrometer Sample environment: high pressure, cryogenic or <i>in situ</i>		
17:00-17:40	Design for the RIXS spectrometer		
18:00-20:00	Dinner at IHEP guest house		

**May 11 Meeting Room 419, Main Building, IHEP**

<b>Time</b>	<b>Topics</b>	<b>Speaker</b>	<b>Chair</b>
09:00-09:40	X-Ray Raman Spectroscopy	Simo Huotari	Hasan Yavas
09:40-10:20	High-Pressure Inelastic X-ray Scattering Science and its Prospects	Yang Ding	
10:20-10:40	X-Ray Raman Scattering and analyzer	Zhiying Guo	
10:40-11:00	Coffee break		
11:00-11:30	Design for the IXS spectrometer	Xu Wei	
11:30-12:00	Analyzer & HRM: R&D efforts and collaborations		
12:00-13:00	Lunch		

## List of participants

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# **WIFI connection**

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Conference code: IXS2018

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