# Applied Nuclear Physics Conference

September 12 – 17 Prague, Czech Republic



The Nuclear Physics Division (NPD) of the European Physical Society (EPS) introduces a new EPS-NPD divisional conference.



# **ORGANIZER**

The Conference is organized by Nuclear Physics Institute (NPI) of the Czech Academy of Sciences.

# **SCIENTIFIC PROGRAM**

The ANP conference will provide an open forum for scientists and engineers working in the wide field of nuclear applications with particular emphasis on energy, health, space, environment, material science, preservation and cultural heritage. This is a unique opportunity for scientists from these different communities to exchange views and foster synergies to find new ways and horizons to the challenges in their field.

Moreover, the ANP conference will offer an overview of the current state-of-the-art to young researchers and students, via numerous lectures presented by the leading scientists in a broad range of nuclear physics applications.

Awarding ceremony of the **IBA-Europhysics prize** will be undertaken by representatives of NPD EPS in the frame of ANP conference in Prague. One of the **IBA Europhysics prize winners** Prof. Marco Durante will present plenary talk.

# **SCIENTIFIC TOPICS**

- · Ion beam analytical methods in material science
- · Ion and neutron beam irradiation of materials
- · Nuclear physics for energy and space technologies
- Nuclear analytical methods for environmental and cultural heritage studies
- · Nuclear physics in medicine

# **IMPORTANT DATES**

- Abstract submission opening: 1.12.2020
- Abstract submission deadline: 30. 4. 2021
- Confirmation of the abstract acceptance: 31. 5. 2021
- Early registration deadline: 30. 6. 2021

# **CONFERENCE VENUE**



Prague, the capital of the Czech Republic, is one of the most attractive and most visited cities in Europe. The city offers its visitors a breathtaking historical atmosphere, presenting architectural masterpieces ranging from the Roman era basilicas to the art nouveau, functionalist and cubist houses of the  $20^{th}$  century. We invite you to visit, among other places, the unique large complex of Prague Castle overlooking the city from one of its hills, to walk over the Charles Bridge built in the  $14^{th}$  century, and to wander the narrow romantic streets of the Lesser Town and Old Town.

# REGISTRATION

Registration form is available on-line via the conference web page www.anpc2021.cz.

REGISTRATION FEE	<b>EARLY</b> until 30/6/21	<b>LATE</b> from 1/7/21
Regular fee	10,000 CZK (-390 €)	12,000 CZK (-470 €)
Student fee	7,000 CZK (-272 €)	9,000 CZK (-350 €)
Accompanying person fee	2,200 CZK (-86 €)	2,200 CZK (-86 €)

Regular and Student fee includes: access to all conference sessions, conference materials, coffee breaks, lunches, welcome drink and social event with sightseeing tour of Prague (VAT included).

**Accompanying person fee includes**: welcome drink and social event with sightseeing tour of Prague (VAT included).

# **ACCOMPANYING PROGRAM**



# Sunday, September 12

Welcome drink, included in the registration fee

# Wednesday, September 15

# The expositions of the Jewish Museum in Prague

14:00-17:00. The walk with guides (held in English) is not included in the registration fee. Registration is available on-line via the conference web page **www.anpc2020.cz** 

# Trip to Karlštejn Castle

14:00-20:00. The trip is not included in the registration fee. Registration is available on-line via the conference web page www.anpc2020.cz

# Thursday, September 16

Social event with sightseeing tour of Prague, included in the registration fee

2 hour guided (walking) tour ends at the restaurant with the buffet dinner.

# **CONFERENCE SECRETARIAT**

AMCA, spol. s r.o. Academic and Medical Conference Agency Vyšehradská 320/49, 128 00 Praha 2

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www.amca.cz

# **CONFERENCE PROGRAM**

# **Applied Nuclear Physics Conference 2021 – SCHEDULE**

Sunday, 12. 9.	Monda	av 13 9	Tuesda	ny 1/1 9	Wedness	lay 15 9	Thursda	ov 16 9	Friday	17.9	
9:00 9:40		Monday, 13. 9.  Plenary talk		Tuesday, 14. 9. Plenary talk		Wednesday, 15. 9. Plenary talk		Thursday, 16. 9. Plenary talk		Friday, 17. 9. Invited talk	
9:40 10:10	2020 IBA-Eur	2020 IBA-Europhysics Prize		Invited talk		Plenary talk		Invited talk		Invited talk	
10:10	Plena	Plenary talk		Invited talk		Invited talk		Invited talk		Invited talk	
10:40 10:50 11:10	Coffee	Coffee break		Coffee break		Coffee break		Coffee break		Coffee break	
11:10	Invited talk	Invited talk	Invited talk	Invited talk	Invited talk	Invited talk	Invited talk	Invited talk	Invited talk	Invited talk	
11:40 12:00 12:00 12:20	Short talk Short talk	Short talk Short talk	Short talk Short talk	Short talk Short talk	Short talk Short talk	Short talk Short talk	Short talk Short talk	Short talk Short talk	Short talk Short talk	Short talk Short talk	
12:20 12:40 12:40	Short talk	Short talk	Short talk	Short talk	Short talk	Short talk	Short talk	Short talk	Short talk	Short talk	
13:50	Lu	Lunch		Lunch		Lunch		Lunch		Lunch	
13:50 14:20	Invited talk	Invited talk	Invited talk	Invited talk	EXHIB Companies and		Invited talk	Invited talk	Invited talk	Invited talk	
14:20 14:40 14:40 15:00	Short talk Short talk	Short talk Short talk	Short talk Short talk	Short talk Short talk			Short talk Short talk	Short talk Short talk	Short talk Short talk	Short talk Short talk	
15:00 15:20 15:20 15:40	Short talk Coffee	Short talk e break	Short talk Coffee	Short talk break	Outing/Social program		Short talk Coffee	<i>Short talk</i> break	<i>Short talk</i> Coffee	Short talk break	
15:40 16:10	Invited talk	Invited talk	Invited talk	Invited talk			Short talk	Short talk	Short talk	Short talk	
16:10 16:40 Arrival & Registrati		Invited talk	Invited talk	Invited talk			Short talk	Short talk	Short talk	Short talk	
16:40 17:00 17:00 17:20 17:20 17:40	Short talk Short talk Short talk	Short talk Short talk Short talk	Short talk Short talk Short talk	Short talk Short talk Short talk			POSTER SESSION & EXHIBITION		Short talk Short talk Closing		
17:40 18:00 18:00 19:00 20:00	Companies and	BITION d infrastructures	POSTER SESSION & EXHIBITION Companies and infrastructures				Companies and infrastructures  Sightseeing tour of Prague				
20:00 Welcome reception	on						Conference dinner				

# **PLENARY AND INVITED SPEAKERS**

# **Opening Plenary**

# **Sylvie Leray**

**CEA Saclay, France** 

"Application of Nuclear Physics in various fields" (opening plenary)

### **Plenary Speakers**

### **Andre Vantomme**

Quantum Solid State Physics, KU Leuven, Belgium

"Recent achievements in IBA"

### Chiara La Tessa

Trento Institute for Fundamental Physics and Applications (TIF-PA), Trento, Italy

"Nuclear interactions of new ions in cancer therapy: impact on dosimetry - Hadrontherapys"

# **Marco Durante**

Biophysics Department, Director, GSI Helmholtzzentrum für Schwerionenforschung, Germany

"Applied nuclear physics at new particle accelerators"

# Mariaelena Fedi

INFN, Florence, Italy

"Small accelerators for cultural heritage - analytical capabilities and historical overview"

### Katharina Lorenz

INESC-MN, IPFN, Instituto Superior Técnico, University of Lisbon, Portugal

"Ion Implantation and Radiation Effects in Group-III Nitride Semiconductors"

# **Invited Speakers**

### **Juha Muhonen**

University of Jyväskylä, Finland

"Si quantum technology with implanted donors"

### **Zdravko Siketic**

Ruder Boskovic Institute, Zagreb, Croatia

"MeV SIMS application in material science"

# **Daniel Primetzhofer**

Uppsala University, Sweden

"Development of ion-beam tools for non-destructive composition analysis"

### Jan Meijer

Felix-Bloch Institute für Festkörperphysik, Leipzig, Germany "Deterministic implantation"

# Richard A. Wilhelm

TU Wien, Vienna, Austria

"Highly charged ion interaction with surfaces"

# Maëlle Kerveno

Maëlle Kerveno, Institut Pluridisciplinaire Hubert Curien, CNRS - Université de Strasbourg, Strasbourg

"New challenges for experimental data dedicated to reactor physics"

# **Juliana Schell**

Solid State Physics Coordinator at ISOLDE-CERN

"Solid State Physics at ISOLDE-CERN"

### **Rene Heller**

Helmholtz Zentrum Dresden-Rossendorf, Germany

"Elemental mapping on the nm scale: RBS and SIMS in the Helium Ion Microscope"

# Peane Maleka

iThemba LABS, Cape Town, South Africa

"Unique high energy neutron beams at iThemba LABS"

# Federico Picollo

Physics Department, University of Torino, Italy

"Diamond devices for biological application (lab on chip)"

# **Thomas Cocolios**

KU Leuven, Leuven, Belgium

"Novel radioisotopes for medical applications: the CERN MEDICIS project and beyond"

### Marie Davídková

Nuclear Physics Institute, Czech Academy of Sciences, Czech Republic

"Microdosimetry of ionizing radiations and its application in radiotherapy and radioecology"

# **Pavol Rajec**

**BIONT, Slovakia** 

"Recent trends in development of PET radiopharmaceuticals for nuclear medicine."

### **Andrew Renshaw**

University of Houston, Houston, USA

"Perspectives on Liquid Argon TOF-PET"

# **Peter Steier**

University of Vienna, Vienna, Austria

"New environmental radionuclides: Long-lived fission products detected by Ion-Laser InterAction Mass Spectrometry (ILIAMS)"

# Stephan Winkler

iThemba LABS, Cape Town, South Africa

"Research highlights from the iThemba LABS AMS facility in archeology, environment, and the earth sciences"

# Lucille Beck

LMC14/LSCE - Laboratoire des Sciences du Climat et de l'Environnement, Gif-sur-Yvette, France

"IBA and AMS techniques for Cultural Heritage studies"

# Jan Kučera

Nuclear Physics Institute, Czech Academy of Sciences, Czech Republic

"Recent achievements in NAA, IBA, and AMS application for cultural heritage investigations at NPI"

# Massimo Chiari

INFN, Florence, Italy

"Nuclear physics for the environment and cultural heritage: A LA-BEC experience"

### Lvudmila Goncharova

University of Western Ontario, Canada

"Ion beam implantation for Si photonics"

# **Thomas Osipowicz**

National University of Singapore, Singapore

"Current status and recent developments of nano-probe microscopies and high depth resolution IBA"

# **Gaston Garcia**

ALBA synchrotron, Barcelona, Spain "Ion beams and synchrotron light in perspective"

# Raquel González Arrabal

Instituto de Fusión Nuclear "Guillermo Velarde", Madrid, Spain (materials for nuclear fusion)

"Current status and new approaches in the development of Plasma facing materials for nuclear fusion reactors"

### Maria Del Carmen Jiménez Ramos

Centro Nacional de Aceleradores, Universidad de Sevilla, Spain "IBIC microscopy for semiconductor detectors research"

# Michal Marčišovský

Czech Technical University in Prague, Faculty of Nuclear Sciences and Physical Engineering, Prague, Czech Republic

"Manalithia silican pival detectors: a new tool for space radiation

"Monolithic silicon pixel detectors: a new tool for space radiation monitoring"

### Alan Owens

European Space Agency ESA, AURORA c/o ESA - ESTEC, Noordwijk, The Netherlands

"Space radiation, research, detection and shielding"

### Oliver Jäkel

German Cancer Research Center, Heidelberg, Ion Beam Therapy UNit, Germanz

"Radiotherapy with proton and carbon ions as well as exploring helium and oxygen beams for future use"

### **Aurélie Gentils**

University Paris-Saclay, Orsay, France

"Dual ion irradiation of nuclear materials in situ in a Transmission Electron Microscope at JANNuS"

# Ljudmila Benedik

Jožef Stefan Institute, Ljubljana, Slovenia

"Application of NAA in environmental research"

# **EXHIBITORS & SPONSORS**

















# **MEDIA PARTNER**

