

MONDAY, 13. 9. 2021

Janák Hall

Plenary session

Session chair: Anna Macková

8:40 – 8:50	Opening Anna Macková
8:50 – 9:30	Plenary talk Applied nuclear physics at new particle accelerators Marco Durante
9:30 – 9:40	2020 IBA - Europhysics Prize - Iva Bogdanovic Radovic
9:40 – 10:10	<i>Invited talk</i> Ion-Beam Therapy at HIT: Options for Multi-Ion Treatment and Research Thomas Haberer, IBA winner 2020
10:10 – 10:40	<i>Invited talk</i> Novel developments of Ion-beam tools for non-destructive composition analysis Daniel Primetzhofer

10:40 – 11:00

Coffee break

Janák Hall

Parallel session

NUCLEAR PHYSICS IN MEDICINE

Session chair: Katia Parodi

11:00 – 11:30	<i>Invited talk</i> on-line Hadrontherapy: physics meets oncology in the fight against cancer Sandro Rossi	11:00 – 11:30	<i>Invited talk</i> MeV SIMS applications in material science Zdravko Siketic
11:30 – 11:50	Nuclear fragmentation studies for hadron therapy and space radiation protection with the foot experiment on-line Sofia Colombi	11:30 – 12:00	<i>Invited talk</i> on-line Ion beams and synchrotron light in perspective Gaston Garcia Lopez
11:50 – 12:10	Simultaneous neutron and gamma imaging system for real time range and dose monitoring in hadron therapy and other applications Jorge Lerendegui-Marco	12:00 – 12:20	Boron quantification and depth profiling by ion beam analysis for characterization of novel boride materials on-line Eduardo Pitthan
12:10 – 12:30	Microdosimetry measurements of low energy protons with new silicon 3D-microdetectors Consuelo Guardiola	12:20 – 12:40	Trajectory-dependent electronic excitations of keV ions Svenja Lohmann

12:40 – 13:40

Lunch

Parallel session

NUCLEAR PHYSICS IN MEDICINE

Session chair: Marie Davidková

13:40 – 14:10	<i>Invited talk</i> Novel radioisotopes for medical applications: the CERN MEDICIS project and beyond Thomas Coccolios	13:40 – 14:10	<i>Invited talk</i> Elemental mapping on the nm scale: Secondary Ion Mass Spectrometry in the Helium Ion Microscope on-line Rene Heller
14:10 – 14:30	Improvement of nuclear reaction modelling for the production of ⁴⁷Sc on natural vanadium targets for medical applications on-line Alessandro Colombi	14:10 – 14:30	Novel applications of 3D ion transmission experiments at keV energies Radek Holeňák
14:30 – 14:50	Theoretical study of ⁴⁷Sc production for theranostic applications using proton beams on enriched titanium targets on-line Francesca Barbaro	14:30 – 14:50	Spatial and Time Characterization of Tandetron Micro-Beams with Timepix and Timepix3 Pixel Detectors Carlos Granja
14:50 – 15:10	²²⁵Ac: From target to test tube to tumor. Developments on how much ²²⁵Ac can be obtained by the ISOL technique. Jake Johnson	14:50 – 15:10	Enhanced Thin Film Analysis via HRBS Using the NEC CARBS System on-line Thomas Pollock

15:10 – 15:30

Coffee break

Parallel session

NUCLEAR PHYSICS IN MEDICINE

Session chair: Iva Ambrožová

15:30 – 16:00	<i>Invited talk</i> on-line Nuclear physics for reduction of range uncertainties in clinical and preclinical applications of ion beams Katia Parodi	15:30 – 16:00	<i>Invited talk</i> on-line Ion beam modification for Si Lyudmila Goncharova
16:00 – 16:20	First in situ 2D-microdosimetry maps at a proton therapy center with novel silicon 3D-microdetectors Diana Bachiller-Perea	16:00 – 16:30	<i>Invited talk</i> on-line IBIC microscopy for semiconductor detectors research Maria del Carmen Jiménez Ramos
16:20 – 16:40	Measurement of the fragmentation cross-section of oxygen ions on carbon and polyethylene targets with the emulsion spectrometer Maria Cristina Montesi	16:30 – 16:50	Demands and challenges for stopping power tabulations Peter Bauer
16:40 – 17:00	Study of the internal pair production decay of the 0⁺ excited state in ⁹⁰Zr by magnetic spectrometry Giuseppe Lorusso	16:50 – 17:10	Proton radiography using the Timepix3 pixel detector applied at Tandetron Václav Olšanský
17:00 – 17:20	Auger electron spectroscopy studies at the national physical laboratory for medical applications on-line Hibaq Mohamud		

Hall No. 152+153

Parallel session

ION BEAM ANALYTICAL METHODS IN MATERIAL SCIENCE

Session chair: Katharina Lorenz

Parallel session

ION BEAM ANALYTICAL METHODS IN MATERIAL SCIENCE

Session chair: Iva Bogdanovic Radovic

TUESDAY, 14. 9. 2021

Janák Hall

Plenary session

Session chair: Jan Kučera

9:00 – 9:40	<i>Plenary talk</i> Recent achievements – and challenges – in ion beam analysis for materials characterization Andre Vantomme
9:40 – 10:20	<i>Plenary talk</i> Paradigm shifting of microdosimetry in particle therapy Chiara Latessa
10:20 – 10:50	<i>Invited talk</i> Let spectrometry in radiotherapy and radiation protection Marie Davidková

10:50 – 11:10

Coffee break

Janák Hall

Parallel session

NUCLEAR PHYSICS IN MEDICINE

Session chair: Thomas Haberer

11:10 – 11:30	MONDO: A scintillating fibre tracker for secondary neutron measurements in particle therapy Antonio Trigilio
11:30 – 11:50	Development of integration mode proton imaging with a single CMOS detector for a small animal irradiation platform on-line Katrin Schnürle
11:50 – 12:10	The PAir PProduction imaging ChAmber (PAPRICA) Yunsheng Dong
12:10 – 12:30	A new nuclear reaction route to produce ^{52g}Mn with high purity for multi-modal imaging on-line Mario Pietro Carante
12:30 – 12:50	Testing a pCT scanner prototype on-line José Antonio Briz Monago

12:50 – 13:50

Lunch

Hall No. 152+153

Parallel session

ION AND NEUTRON BEAM IRRADIATION OF MATERIALS

Session chair: Zdravka Siketic

11:10 – 11:40	<i>Invited talk</i> on-line Highly charged ion interaction with surfaces Richard A. Wilhelm
11:40 – 12:10	<i>Invited talk</i> on-line Nuclear materials and ion irradiation studies using the JANNUS-orsay in situ dual ion beam transmission electron microscope Aurélie Gentils
12:10 – 12:30	Radiation defect dynamics in beta Ga₂O₃: ion flux vs irradiation Alexander Azarov
12:30 – 12:50	One-step 3D microstructuring of PMMA using MeV light ions Oleksandr Romanenko

Parallel session

ION AND NEUTRON BEAM IRRADIATION OF MATERIALS

Session chair: Alexander Azarov

13:50 – 14:20	<i>Invited talk</i> Recent trends in development of pet radiopharmaceuticals for nuclear medicine Pavol Rajec
14:20 – 14:40	Metrology for advanced radiotherapy using particle beams with ultra-high pulse dose: test in flash-like electron beam at microtron MT 25 Iva Ambrožová
14:40 – 15:00	First in-beam tests on simultaneous PET and Compton imaging aimed at quasi-real-time range verification in hadron therapy Javier Balibrea Correa
15:00 – 15:20	Measurement of the production cross section of β⁺ emitters for range verification in proton therapy María Teresa Rodríguez González
15:20 – 15:40	Recent CALCULATIONS FOR D₂O MODERATED ²⁵²Cf REFERENCE FIELDS AT PTB Amer Al-Qaad
14:10 – 14:30	Response of defective KTaO₃ to ionizing ion irradiation Gihan Veliša
14:30 – 15:00	<i>Invited talk</i> on-line Unique High Energy Neutron Beams at iThemba LABS Peane Maleka
14:50 – 15:10	A ground-based evaluation of the impact of neutron dose rate on health effects during space travel on-line Charlot Vandervoorde

15:20 – 15:40

Parallel session

NUCLEAR PHYSICS IN MEDICINE

Session chair: Thomas Colclough

15:40 – 16:00	Data-driven model of carbon ion fragmentation in a fast MC code (FRED) for treatment planning system Micol De Simoni
16:00 – 16:20	New methods for theranostic radioisotope production with solid targets at the Bern medical cyclotron Gaia Dellepiane
16:20 – 16:40	Clinical results of in-vivo inter-fractional monitoring in particle therapy by means of the inside in-beam PET on-line Elisa Fiorina
16:40 – 17:00	Inter-fractional monitoring in Particle Therapy treatments with ¹²C ions exploiting the detection of secondary particles Gaia Franciosini

17:10 – 17:30 Rapid fire poster session (online)

Parallel special session

iThemba lab

Session chair: Pavol Naga

15:40 – 16:10	<i>Invited talk</i> on-line Development and application of the first AMS facility in Africa Stephan Woodborne
16:10 – 16:30	Experimental ion beam - matter interaction parameters at 0.1 MeV/u – 1.0 MeV/u energies for heavy ion nuclear analytical techniques on-line Mandla Msimanga
16:30 – 16:50	Micro proton induced X-ray emission spectroscopy application in environmental studies on-line Christopher Mtshali

17:30 – 17:45 Exhibition companies on line - iThemba lab

17:45 – 18:00 Exhibition companies on line - NEC

18:00 – 20:00 Exhibition companies and infrastructure/Poster session 1 - Nuclear Physics in Medicine, Ion and Neutron Beam Irradiation of Materials and iThemba lab posters - foyer

WEDNESDAY, 15. 9. 2021

Janák Hall

Plenary session

Session chair: Andre Vantomme

9:00 – 9:40	Plenary talk Ion implantation and radiation effects in group III nitride semiconductors Katharina Lorenz
9:40 – 10:10	Invited talk on-line Silicon quantum technologies with implanted donors Juha Muhonen
10:10 – 10:40	Invited talk on-line Semiconductor materials for radiation detection – current status and and future development Alan Owens

10:40 – 11:00

Coffee break

Janák Hall

Parallel session

NUCLEAR PHYSICS FOR CULTURAL HERITAGE AND ENVIRONMENT

Session chair: Rene Heller

11:00 – 11:30	Invited talk Recent achievements in NAA, PAA, IBA, and AMS application for cultural heritage investigations Jan Kučera
11:30 – 11:50	Studying UV Ageing Effects ni Modern Artists' Paints with MeV-SIMS Matea Krmpotić
11:50 – 12:10	Elemental and phase mapping of sword fragments from 2nd–1st century BCE China on-line Anna Fedrigo
12:10 – 12:30	Recent developments in IBA analysis at CENTA, Bratislava Miroslav Jeřkovský
12:30 – 12:50	Development of a photoionisation mass spectrometer for measurement of ⁸⁵Kr on-line Holly Perrett

12:50 – 13:40

Lunch

Parallel session

NUCLEAR PHYSICS FOR CULTURAL HERITAGE AND ENVIRONMENT

Session chair: Federico Picollo

13:40 – 14:00	Natural radioactivity and importance for soil: a review on critical findings in Turkey on-line Inci Karakas
14:00 – 14:20	Non-destructive mass spectrometry of single hot particles from the Chernobyl exclusion zone by resonant laser SNMS Darcy van Eerten
14:20 – 14:40	Radiation exposure of microorganisms living in radioactive mineral spring on-line Sofia KOLOVI
14:40 – 15:00	Development of novel instrumentation for matrix independent ultra-trace detection and quantitation of radionuclides using colinear resonance ionisation Giles Edwards

15:00 – 15:30

Coffee break

15:30 – 16:10	Rapid fire poster session (online)
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16:10 – 17:00

Exhibition companies and infrastructure/Poster session 2 - Ion Beam Analytical Methods in Material Science, Nuclear Physics for Energy and Space Technologies and Nuclear Physics for Cultural Heritage and Environment

17:00 – 19:00

Sightseeing tour of Prague (walking guided tour)

19:00

Conference dinner

Hall No. 152+153

Parallel session

ION AND NEUTRON BEAM IRRADIATION OF MATERIALS

Session Chair: Richard A. Wilhelm

11:00 – 11:30	Invited talk on-line Ion beam modification of diamond for biosensing application Federico Picollo
11:30 – 12:00	Solid state physics at isolde-CERN on-line Juliana Schell
12:00 – 12:20	Development of the tagged neutron method for elemental analysis and nuclear reaction studies – the Tangra project on-line Nikita Fedorov

Parallel session

NUCLEAR PHYSICS FOR ENERGY AND SPACE TECHNOLOGIES

Session Chair: Marek Rubel

13:40 – 14:10	Invited talk New challenges for experimental data dedicated to reactor physics Maelle Kerveno
14:10 – 14:30	Facilities for complementary physics experiments at the IFMIF-DONES fusion neutron source on-line Wojciech Krolas
14:30 – 14:50	Applied nuclear physics for the verification of nuclear weapons disarmament Moritz Kütt
14:50 – 15:10	Measurement of the ²³⁵U(n,f) cross section relative to n-p scattering up to 500 MeV at the n_TOF facility at CERN on-line Alice Manna

THURSDAY, 16. 9. 2021

Janák Hall

Plenary session

Session chair: Raquel Gonzales Arrabal

9:00 – 9:40	<i>Plenary talk</i>
on-line	Small accelerators for cultural heritage - analytical capabilities and historical Mariaelena Fedi
9:40 – 10:10	<i>Invited talk</i>
on-line	IBA and AMS techniques for Cultural Heritage studies Lucille Beck
10:10 - 10:40	<i>Invited talk</i>
	Nuclear physics for the environment and cultural heritage: the LABEC experience Massimo Chiari

10:40 – 11:00

Janák Hall

12:30 – 13:40

15:10 – 15:30

Coffee break

Hall No. 152+153

Parallel session

NUCLEAR PHYSICS FOR ENERGY AND SPACE TECHNOLOGIES

Session Chair: Maelle Kerveno

11:00 – 11:30	<i>Invited talk</i>
	Ion beam analysis in studies of first wall materials in controlled fusion devices Marek Rubel
11:30 – 11:50	Calibration challenges of pin diode silicon detector Martin Kákona
11:50 – 12:10	Performances of a compact neutron detector using high purity ¹⁰B-enriched pldgrowth films
on-line	Simone Amaducci
12:10 – 12:30	Real time dosimetry with radio-chromic films Francesco Di Capua

Lunch

Parallel session

NUCLEAR PHYSICS FOR ENERGY AND SPACE TECHNOLOGIES

Session Chair: Romana Miksova

13:40 – 14:10	<i>Invited talk</i>
on-line	Plasma facing materials for inertial confinement nuclear fusion reactors Raquel González Arrabal
14:10 – 14:30	Elemental analysis of concrete via fast neutron transmission and scattering spectrometry
on-line	Tanya Hutton
14:30 – 14:50	Experimental study of space radiation shielding materials: measurement of secondary
on-line	Miroslav Zbořil
14:50 – 15:10	Extension of the bianca biophysical model up to Fe-Ions and applications for space radiation
on-line	Ricardo Luis Ramos

Closing

TUESDAY, 14. 9. 2021 | POSTER SESSION

On-site posters

NUCLEAR PHYSICS IN MEDICINE, ION AND NEUTRON BEAM IRRADIATION OF MATERIALS

P1	An optimized DT-neutron generator irradiation facility for prompt neutron activation analysis of light Radim Uhlář
P2	Energetics, migration and trapping of Zn interstitials in ion implanted ZnO Alexander Azarov
P3	Study of the charge collection efficiency in novel silicon 3D-detectors for microdosimetry Diana Bachiller-Perea
P4	Stopping force of diamond like carbon and silicon nitride for beryllium and boron ions Basil Gonsalves
P5	Ion track formation in sapphire studied by sequential swift heavy ion irradiation Juraj Hanžek
P6	ZnO nano-pillars decorated with Au nanoparticles prepared by ion beam implantation Anna Mackova
P7	Properties of graphene oxide, polyimide, polyetheretherketone and polyethyleneterephthalate implanted by multi-energetic Au ions Petr Malinsky
P8	The structural and optical response of the Au nanoparticles embedded in YSZ modified using high Romana Mikšová
P9	Plasma immersion ion implantation induced surface patterning Pavol Noga
P10	Ion beam synthesis of high oxidation state palladium oxide nanoparticles Filip Ferenčík
P11	Assessing electronic excitations in singlecrystalline SiC foils by keV ions Eleni Ntemou
P12	Capabilities of the ion beam microprobe in the study of different polarization quenching techniques Mauricio Rodriguez Ramos
P13	In-situ ToF-LEIS study of tungsten surface enrichment in EUROFER97 by annealing to elevated Jila Shams-Latifi
P14	Properties of polyamide 6 and polyvinylidene fluoride nanofibers irradiated using C and H ions Eva Stepanovska
P15	Irradiation of (111)-CaF₂ using a modernized beamline in Uppsala Petter Ström
P16	Charge state dependence of the damage onset depth in selfirradiated Ge Petter Ström
P17	Experimental alpha-particle modifications of the natural resins. Vladimír Strunga
P18	Raman spectroscopy investigation and molecular dynamics simulations of ion tracks in graphene Kristina Tomić Luketić
P19	Energy retention in swift heavy ion irradiated thin films Damjan Iveković
P20	Enhancing gamma production for online dose verification in proton therapy Giorgio Cartechini

Rapid fire poster session (on-line)

NUCLEAR PHYSICS IN MEDICINE, ION AND NEUTRON BEAM IRRADIATION OF MATERIALS

16:50 - 16:55	eP1	Investigating a potential health risk due to radiation from samples collected Mistura Bolaji Ajani
16:55 - 17:00	eP2	Photoluminescence and EPR studies of single diamonds with GeV-color Nikolay Lyadov
17:00 - 17:05	eP3	Optical parameters study of amorphous germanium (α-Ge) by spectral Nikolay Lyadov
17:05 - 17:10	eP4	High-Z Metal (Oxide) Nanoparticles for Contrast Enhancement in Proton Katrin Schnürle

Wednesday 15. 9. 2021 | POSTER SESSION

On-site posters

NUCLEAR PHYSICS IN ENVIRONMENT AND CULTURAL HERITAGE, NUCLEAR PHYSICS FOR ENERGY AND SPACE TECHNOLOGIES, IBA IN MATERIAL SCIENCE

P21	Development of diamond based cryogenic neutron detectors for nuclear fusion applications Donny Cosic
P22	Pulsed laser deposition of thin films on polydimethylsiloxane for biomedical application Mariapompea Cutroneo
P24	The synthesis of Au-NPs by energetic ion implantation into the crystalline GaN and characterisation of Adéla Jagerová
P25	Hydrogen storage on the nanoscale: visualizing interstitial hydrogen in nanostructured metals with MeV Kristina Komander
P26	Non-destructive techniques applied to the characterization of ancient glass mosaic tesserae Giulia Marcucci
P27	In-situ characterization of ultra-thin nickel silicide films using low energy ion scattering Philipp Mika Wolf
P28	Characterization of titanium aluminum nitride films using low energy ion scattering Philipp Mika Wolf
P28	Porous polydimethylsiloxane composite filled with graphene oxide and gold nanoparticles Mariapompea Cutroneo

Rapid fire poster session (on-line)

NUCLEAR PHYSICS IN ENVIRONMENT AND CULTURAL HERITAGE, NUCLEAR PHYSICS FOR ENERGY AND SPACE TECHNOLOGIES, IBA IN MATERIAL SCIENCE

15:30 - 15:35	eP5	X-ray spectroscopy study on thai amulet: Phra Kru Nadue Pisutti Dararutana
15:35 - 15:40	eP6	Precise determination of U235 and Ra-226 photopeak intensities in naturally Sy Minh Tuan Hoang
15:40 - 15:45	eP7	Application of the Rutherford Backscattering Method in Powder Alisa Tatarinova
15:45 - 15:50	eP8	High solid angle RBS detection of heavy elements with low concentrations in Fares Boussahoul
15:50 - 15:55	eP9	Studying oxygen mobility in photochromic yttrium oxy-hydride films by isotopic Dmitrii Moldarev
15:55 - 16:00	eP10	Development of a compact X-ray multi-technique device for cultural heritage Leandro Sottili
16:00 - 16:05	eP11	Gamma ray transmission technique with a barium source for the study of Francisco J. Ager
16:05 - 16:10	eP12	Identification of 90Sr in environmental samples via the hyphenation of ICP-MS Matthew Duggan