Contribution ID: **285** Type: **Oral Presentation**

IAEA activities in support of nuclear physics research and applications

Facilitation of development and promotion of nuclear applications for peaceful purposes and related capacity building are among the IAEA missions where Physics Section contributes most [1]. The relevant activities fall under the IAEA's program on nuclear science and cover three main thematic areas: research and applications with particle accelerators and neutron sources (incl. research reactors), nuclear instrumentation and capacity building, and controlled fusion research and technology (incl. cooperation with ITER). As a result, the Section helps IAEA's Member States to advance their capabilities and progress in materials research, energy, environment, food, agriculture, medicine, cultural heritage, forensics, and some other fields with a direct socioeconomic impact.

The Section also operates the Nuclear Science and Instrumentation Laboratory (NSIL) at Seibersdorf [2], located 40 km south of Vienna. The NSIL provides expertise, training and support in the effective utilization of nuclear instrumentation and analytical techniques in a broad range of applications, with a focus on mobile radiation monitoring, X-ray spectrometry, and neutron science.

This presentation will illustrate through a number of selected examples how the IAEA supports nuclear physics research and diverse applications in order to address key development priorities in many areas of societal importance and economic growth of the developing countries. Where applicable, direct linkage to the United Nations Sustainable Development Goals (UN SDGs) will be demonstrated. In addition, some future plans on enhancing capabilities of the NSIL as part of Physics Section will be highlighted, in particular by establishment of the ion beam facility (IBF) based on a compact particle accelerator and offering research and applications both with ion beams and neutrons.

[1] https://www.iaea.org/about/organizational-structure/department-of-nuclear-sciences-and-applications/division-of-physical-and-chemical-sciences/physics-section
[2] https://nucleus.iaea.org/sites/nuclear-instrumentation/

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Session Classification: Parallel session

Track Classification: Nuclear Physics Applications