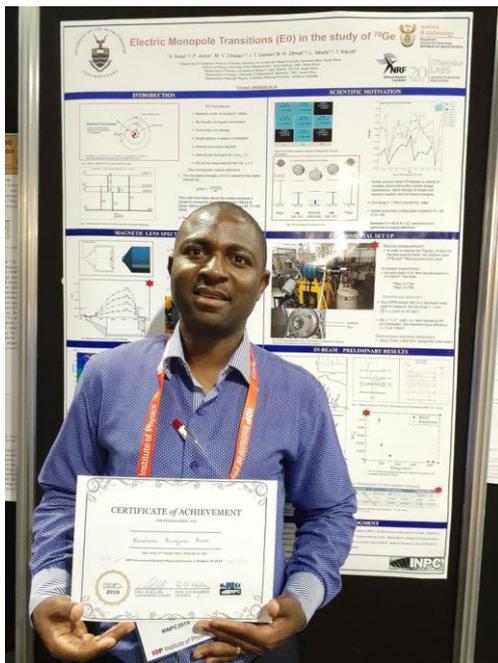


Media Release: CNNP2020

The National Research Foundation's research infrastructure platforms include the iThemba Laboratory for Accelerator Based Sciences (iThemba LABS), which is the continent's largest facility for particle and nuclear research as well as one of only a few facilities in the world producing radionuclides for research and medical applications. From 24 - 28 February 2020, iThemba LABS is hosting the second Conference on Neutrino and Nuclear Physics (CNNP) at the African Pride Arabella Hotel & Spa near Kleinmond, South Africa. This conference aims to promote collaboration between scientists from the fields of nuclear, neutrino, astro- and dark-matter physics, and to create an environment where experiments and theories related to the interplay of these fields can be discussed.

When the International Advisory Panel of CNNP awarded iThemba LABS the honour of hosting the second CNNP, they recalled that neutrino-detection experiments in South Africa go back to the 1960s. Reines and Sellschop operated a liquid scintillator in the East Rand Proprietary Mine, 3288 m below the surface, resulting in the first observation of cosmic-ray-induced neutrinos. The Standard Model of particle physics provides the best description so far of the universe's fundamental building blocks, but it is still incomplete. One of the most promising areas for updating the Standard Model lies with neutrinoless double-beta decay. Present-day experimental facilities available at iThemba LABS can be utilised to improve our understanding of how the structure of nuclei affects the rate of neutrinoless double-beta decay, enabling the determination of the effective neutrino mass. In fact, scientists at iThemba LABS now form part of the NUMEN collaboration (an international group of scientists focussing on these kinds of studies), with plans to adapt detector hardware from Laboratori Nazionali del Sud (LNS) in Catania for use with the K600 Magnetic Spectrometer at iThemba LABS.

A strong program for the week has been organised by the International Advisory and Local Organising Committees, from which it is the hope that all will benefit hugely. As part of CNNP2020, a special session sponsored by the Southern African Institute for Nuclear Technology and Sciences (SAINTS), another iThemba LABS initiative, has been organised to allow masters and doctoral students doing research in basic/applied nuclear physics at South African universities to participate in CNNP2020 by presenting a poster on their research. This session will exhibit the range of topics in nuclear physics studied at South African universities as well as showcase the exceptional talent of our students.



An example of such talent is that of Abraham Avaa (picture above), a PhD student who gained special recognition at the International Nuclear Physics Conference (INPC) in Glasgow during August 2019, where he was awarded a prize for the poster he presented. INPC is the world's largest nuclear physics conference and, as such, it is a huge honour that iThemba LABS was asked to host INPC in Cape Town in 2022.

iThemba LABS insisted on the SAINTS poster session being included in the CNNP program since one of the top priorities at iThemba LABS is the growth and success of masters and doctoral students. Providing a platform for the students to share their research with and receive feedback from experts in the CNNP scientific community is an experience that will play an invaluable role in their professional development.

CNNP2020 promises to be an excellent conference that results in many fruitful new collaborations and we look forward to the outcomes of this week!

