EPS Historic Site 2021 - The Cyclotron Hall of Louvain-la-Neuve, Belgium

On Tuesday October 12 2021, the European Physical Society (EPS) and the Belgian Physical Society honored the Cyclotron Hall in Louvain-la-Neuve as EPS Historic Site. A commemorating plaque was unveiled by the president of EPS, Luc Bergé, and the president of BPS, Jef Ongena during an academic session at the "de Hemptinne" building of UCLouvain, which hosts the Cyclotron Hall.

The commemorative plate holds the following text:

*This building has hosted a world-leading nuclear-physics experiment involving the post-acceleration of short-lived radioactive nuclides. A beam of $^{13}$N, an unstable isotope of nitrogen with a half-life of 10 minutes, was produced for the first time on 21 June 1989 by coupling two cyclotrons with an on-line ion source. In December 1990, the energy, intensity, and purity of the beam allowed the successful study of the key stellar reaction within the hot Carbon-Nitrogen-Oxygen (CNO) cycle: $^{13}$N + $^1$H -> $^{14}$O + γ.*

*The technologies and instrumentation developed to produce and use energetic radioactive ion beams, and the evidence that it was then possible to perform detailed nuclear-reaction studies with short-lived radioactive isotopes, has given rise to the birth of new research fields in nuclear physics and astrophysics.*

*This breakthrough in accelerator, nuclear-physics and nuclear-astrophysics research was the result of an intensive collaboration between teams from the Belgian universities ULB, KU Leuven and UCLouvain. It paved the way for a multitude of challenging experiments with radioactive ion beams involving major European collaborations and has led to the construction of significant facilities for producing radioactive ion beams in many countries around the world.*

The academic session was hosted by Prof. Giacomo Bruno, president of the Institut de Recherche en Mathématique et Physique of UCLouvain and started with welcome addresses
presented by the president of the Belgian Physical Society, Dr. Jef Ongena, by the rector of UCLouvain, Prof. Vincent Blondel, the vice-rector for external relations and development cooperation of the ULB, Anne Weyembergh, the vice-rector for international affairs of KU Leuven, Prof. Peter Lievens and the president of the European Physical Society, Dr. Luc Bergé. This was followed by three talks presenting the realizations at the Louvain-la-Neuve cyclotrons. In his talk “Where new Novae were born”, Dr Stephane Goriely (ULB) sketched the astrophysical background and the impact of the experiment, using a text which was prepared by Prof. Marcel Arnould (ULB) who unfortunately could not be present. Dr Marc Loiselet (UCLouvain) described the challenges to produce a pure and intense $^{13}$N beam at the right energy to measure the proton capture ratio in his talk “Producing radioactive beams: from dream to reality” and finally Prof. Piet Van Duppen (KU Leuven) presented the experiment as “Searching for a needle in a haystack”. Prof. Marek Lewitowicz, Chair of the Nuclear Physics European Collaboration Committee (NuPECC) – GANIL, France concluded the academic session by giving in his talk “Radioactive Beam Science: an international endeavor” an overview of the present status of the radioactive ion beam research field.

The presidents of the European Physical Society and the Belgian Physical Society together with the physicists and engineers involved in the production of the $^{13}$N beam and the measurement of the $^{13}$N + $^1$H -> $^{14}$O + $\gamma$ reaction. (Copyright Benjamin Zwarts).