

PRESSRELEASE

Research in Micro-Pattern Gaseous Detector-Related Technologies and Applications Attracts Larger and Smaller Industrial Players

The RD51 collaboration event dedicated to neutron detection with MPGDs (Micro-Pattern Gas Detectors), held at CERN on March 16th -17th, 2015, brought together prominent representatives of the particle physics community as well as already established and relatively young industrial players in the field of neutron detectors.

The aim of the event was to help disseminating MPGD technologies beyond fundamental physics, where academic institutions, potential users and industry could meet together.

The shortage of Helium-3 in the world brings new challenges to neutron detection, especially in the areas of homeland security, non-proliferation, neutron scattering science and other fields. Micro-Pattern Gas Detectors offer attractive alternative solutions for neutron detection, complementing Helium-3 based proportional counters. The event provided a platform for discussion of the prospects of the MPGD use for thermal and fast neutron detection, commercial requirements and possible solutions.



It was organised jointly by HEPTech and RD51 Collaboration at CERN as a follow-up of a similar event that took place in October, 2013. “Our cooperation with HEPTech has already a long history”, says Dr. Maxim Titov from CEA Saclay/Irfu, co-spokesperson of the RD51 Collaboration, together with Leszek Ropelewski from CERN.

RD51 is a technology based collaboration which addresses the technological development of Micro-pattern gas detectors. MPGDs are not only used in LHC experiments but also in numerous applications outside the high energy physics. The RD51 was created in 2008 and in 2013 it was approved for another 5-year term. The organization of such academia-industry matching events (AIMEs), disseminating MPGD applications beyond fundamental physics, was one of the major new activities when the continuation of the RD51 programme was discussed. “As a key point of being a technological collaboration, for us it was very important somehow to link our collaboration to potential users and industrial companies that might be

interested in the technology. The help of HEPTech was enormous in terms of organisation and contacts with industrial partners and we value very much this collaboration now and for the future”, explains Titov.

Acknowledging the fruitful cooperation, the co-organizers have decided to continue that tradition and have planned another AIME dedicated to photon detection with MPGDs, in June 2015 at CERN.



The Globe of Science at CERN hosted 75 participants, including the representatives of five industrial partners. “It was nice to see many new faces and that approximately 70% of the participants to the event came from outside the RD51 collaboration”, says Maxim. “We consider this already a real success. Due to the specifics of the gas detectors that are not the easiest technology which can go

to industry, it will take more than one and a half years, the time that has passed from the first event, until some applications are implemented in the industrial domain. However, in high energy physics, nuclear physics and reactor experiments we already see the interest of the corresponding communities to discuss with us the needs of using MPGD technologies in their experiments”, explains Titov. In the particular case of the neutron detection domain, one of the best examples is the European Spallation Source which is now considering MPGD technology as one of the major technologies for their experiments.

Among the industrial partners attending the event, there were two companies representing the extremes in the market of detector-related technologies and application: SCIENTIFICA Internacional, a small company from Spain, created in 2009 and CAEN, from Italy - large, experienced and well established in the market, a strong partner for CERN.

SCIENTIFICA, a company with staff of nine persons, covers the whole value chain in the development of neutron detectors for multiple scientific applications.

“Competition is always difficult, especially with big companies that have a lot much resources and track record”, says Lander Gonzalez Larrea, Business Manager of SCIENTIFICA. However, he believes that in such a specialized market like the scientific research facilities, there is room for a lot of different agents. The company tries to be more flexible and more dedicated to the client to provide a better service - more customized to the clients’ needs and very specialized in technology. “Cost is also an important variable: for specialized services or short series productions, the usual situation in this market segment, small companies like ours can offer more competitive costs, due to lower fixed costs. Regarding the attitude towards the client, we can say that clients can take advantage of the

fact that for a small company, a client like CERN is relatively more important than in the case of a big multinational or multisegment company”, Larrea shares some of the secrets to success.

The driving principle of SCIENTIFICA is to cooperate with research teams so that they can boost their scientific results while the company is looking after the engineering aspects of development.

Specialized in electronics for radiation detectors and particle physics, with 30 years experience in providing applications and systems to scientists, CAEN is involved in several collaborations focused on neutron detectors and MPGDs and is looking for more.

Alessandro Iovene, Key Account Manager at CAEN, believes that the crossing point between industry and academia comes when the market is asking for a solution of a new problem. This is where the research community can help and thus, industry also has a huge role because it is the driver of the technological innovation bridging the research world and the market. “Our field of expertise is electronics and our collaborators are experts in the other fields needed to develop a complex system. So, by merging something that is already on the market, our knowledge in electronics and the knowledge of research institutions we can develop a product ready for the final user”, says Iovene.

He is convinced that such AIMEs are beneficial for the industrial partners as they give them the opportunity to meet researchers from other institutions, to get acquainted with new applications and to discuss new projects together.

CAEN is one of the large companies involved in a long-term collaboration with academia. Part of its success is due to the fact that it was born as a spin-off company of the INFN (the National Institute of Nuclear Physics) in Italy thus implementing the entrepreneurial potential of young researchers. As a technology transfer network, HEPTEch has identified the need of development of such potential among the early stage researchers and addresses it by its annual symposium. This year, the HEPTEch Symposium will be hosted by Inovacentrum at the Czech Technical University and will take place in Prague, from May 31st to June 6th 2015.

“It is quite rare today to find a physicist who has unique capabilities to simultaneously maintain the proper balance of research experience and growth, organizational and communicational skills. Therefore, it is very important for the young people to realize that to be a well balanced researcher one has to do not only the fundamental physics analysis but also to be in close connection with the technology domains from the beginning of their careers. I believe the annual HEPTEch Symposium dedicated to development of entrepreneurial spirit of early stage researches will contribute to this aim and I will be glad to attend this event”, says Dr. Titov.

Written by: Eleonora Getsova,

HEPTEch Communication officer