Piotr Gasik

DRD1 Spokespersons Election 2023
Statement

Dear Colleagues,

I am truly honoured to be considered as a candidate for the role of DRD1 spokesperson and I would like to thank everyone who has nominated me, and expressed encouragement and support for my candidacy. After one year of proposal preparation, we are now ready and eager to start the activities within our new collaboration, with well-defined plans for the near and distant future. If elected as a co-spokesperson, I would commit to foster a lively scientific debate and a congenial working environment, and I will ensure that our research and results are well recognized within and outside the gaseous detector community.

During the last twelve months, we all did a remarkable job in preparing the DRD1 proposal. Starting as relatively independent communities focused on different technologies, we made a great step forward putting together one proposal representing a view of the entire gaseous detector community. As a Working Group 2 convener and Work Package coordinator, I could experience the process of building a collaboration. This was a truly community-driven approach in which we managed to present a concise collaboration structure with Working Groups as the core of the scientific activities, and their working plan including tasks related to diverse technologies and applications. This approach allowed us to follow our individual developments and projects, not always aligned with the general ECFA strategy, as in the case of implementation of the "Beyond HEP" Work Package. The continuation of this strategy and its facilitation will be one of the important responsibilities of the new spokespersons and their team.

The DRD1 collaboration stems from the previous RD51 collaboration that I joined in 2012 experiencing a well organised and friendly group. Certainly, these qualities shall be preserved in the new structure, as it has been shown to work reliably and efficiently over the past years.

The DRD1 will consolidate a broader community, that compromises the full spectrum of gaseous detector technologies, facilities and tools. Despite of the many challenges, this integration process is an important opportunity to create a global gaseous detector community that can push the frontiers of the applicability of gaseous detectors in modern high-energy and nuclear physics experiments as well as applications beyond fundamental research. The new organization should preserve the individual aspects of different communities emphasizing common developments. All gaseous detector technologies experience common challenges, such as ageing effects, discharge stability, gas system development, large-scale production QA and QC methods, and several others. DRD1 should be a forum, where all experts can communicate with each other, share their experience, compare solutions, and develop common tools to support further developments, both in the software and infrastructure domain. It is clear that such global discussions must happen on a more regular basis than the one offered by, for example, Ageing conferences (once every > 10 years!). I see the future DRD1 collaboration as a forum for such discussions and as a spokesperson, I will ensure this is followed during the upcoming collaboration meetings, mini-weeks and topical workshops. Here, I recognize the pivotal role played by Working Group 8 (Training and dissemination) which should foster the knowledge transfer between the generations of detector physicists through the organization of dedicated schools, workshops and hands-on sessions.

The fact that DRD1 is a large collaboration, with a broad range of activities and a large geographical spread, means that communication is challenging and that it can be difficult for individual members and groups to stay informed of ongoing developments. I plan to explore further improvements in our communication tools and the format of our meetings. We also need to make sure that the students have a chance to

present their work. Given the wide spread of the topics covered by the collaboration activities, we may want to consider introducing topical mini-weeks or topical days during the collaboration meetings, devoted to particular technology or focusing on particular working group activities. I plan to keep this high on the agenda of the management team.

The new DRD1 collaboration will consolidate diverse detector technologies but we should also keep in mind diversities among the community members. As a spokesperson, I would like to pay special attention to the career development and support of young collaborators. Given the fact that detector physics is usually not recognized as an independent branch of physics, career opportunities, especially at the universities, are often substantially reduced. There is a certain number of possibilities on the national institute level, however, the uncertainty on the career development of a young researcher in the field of instrumentation is certainly a reason why many of our young colleagues change their career path, even after very successful PhD studies or post-doc programs. I think, that increasing the visibility of the collaboration outside the (gaseous) detector community may give additional recognition to the young researchers involved in the DRD1 activities and help them in reaching the next steps of their careers. This could start together with increasing the visibility of young people within the collaboration itself by, for example, a regular rotation of the co-conveners of the working groups. Moreover, I would consider establishing a dedicated young investigator (common) project fund to encourage young members of the collaboration to apply for the funding necessary for the realization of their projects which could potentially result in a grant application for national or international (e.g. EU) funding.

The views presented above cover only a few challenges the new collaboration will need to face, especially in the initial period of its implementation. However, I strongly believe that in a dedicated group of the DRD1 management, representing views of the entire collaboration, the required details can be worked out, together with our entire community. I am eager to take over the responsibility for shaping these aspects of the new DRD1 collaboration.

During this process of proposal preparation, I was able to meet many of you for the first time. Despite many challenges, deadlines, and hours of discussions on available and additional work package resources, I really liked this period which allowed us to get together and make the very first step towards the new collaboration. It was, therefore, a great honour to speak on behalf of all of us presenting the proposal to the DRD Committee. The seed of the DRD1 community has been planted and I am eagerly waiting to see how it grows. I would therefore like to express my readiness to help shape the new collaboration to make the best out of this challenge.

I am looking forward to discussing these and any other items that you would like to bring up in the Q&A session. For those interested, a few notes on my scientific career are given below.

Yours faithfully,

Piotr Gasik

Brief notes on my professional background

I am currently a staff physicist at the GSI Helmholtzzentrum für Schwerionenforschung GmbH, delegated to the Facility for Antiproton and Ion Research in Europe GmbH, in the position of the Technical Coordinator of the Compressed Baryonic Matter (CBM) experiment.

In the past eleven years, I have been involved in detector developments for large, international facilities. After obtaining a PhD in nuclear physics in 2011 at the University of Warsaw, Poland (titled: "The study of nuclear matter properties using strange particles: the analysis of Al+Al collisions at 1.9A GeV") I moved to Munich. In the years 2012-2020 I worked at the TU München on the upgrade of the ALICE Time Projection Chamber (TPC) with Gas Electron Multiplier (GEM) detectors. In the initial phase of the project, I was leading the effort to design, optimize and build the first full-size GEM readout chamber prototypes (Inner and Outer Readout Chambers employing 3- and 4-GEM stacks). All prototypes were built at the TU München and underwent a comprehensive test program with beams at the CERN PS and SPS, demonstrating that the GEM technology is suitable for the TPC upgrade. Soon afterward I took the lead in the upgrade project in Munich. In 2014 I was appointed as a coordinator of the TPC Readout Chamber Upgrade, which included the coordination of the following work packages: GEM production and Quality Control, Inner and Outer Readout Chamber production in the US and Europe, and the development of a new HV system. In this challenging position, it was my task to organize and manage the activities of a large number of groups working on the project around the world. The production of the readout chambers was accomplished at the beginning of 2019. In January 2019 I became a Scientific Associate at CERN. For the period of the LHC Long Shutdown 2 I was appointed the TPC Upgrade Installation Manager with a focus on chamber installation and the TPC pre-commissioning. The project has been successfully concluded. The TPC was installed in the ALICE pit and commissioned with beams in 2021.

In February 2020 I started my work as a Technical Coordinator of the CBM experiment at the newly built FAIR facility in Darmstadt. My activities include, among others, the monitoring of the technical design of the CBM detector, the quality assurance of the design and manufacturing process of the subsystem components, the organization and execution of the reviews, installation, and pre-commissioning planning. I took over the coordination in a very challenging period of transition from the R&D and prototyping towards the mass production of the detector components. Despite difficulties caused by the global pandemic and economic crisis, the project is on track toward the start of operation. In my role as Technical Coordinator, I have in the past years gained substantial experience in the management of large physics projects, including all aspects of R&D, resource planning and organization, funding, in-kind contract execution, and reporting.

In addition to the coordination duties, I conduct an R&D program with Micro Pattern Gaseous Detectors, focused on the optimization of their performance and stability against electrical discharges. This includes the development of new structures and electrode materials for novel applications in MPGD-based photon detectors and Time Projection Chambers. The R&D activities resulted in eleven scientific papers published in the framework of the RD51 Collaboration. Since 2021 I am a guest lecturer at TU Darmstad. In 2023 I obtained a habilitation degree based on the cumulative thesis titled "Discharge Phenomena in Micro Pattern Gaseous Detectors".