

12 Dec 2018

EASITrain gears up following mid-term review

by Panos Charitos (CERN)

[EASITrain](#)

The meeting offered the opportunity to young researchers to present their latest work.



Group photo taken during the MSCA EASITrain midterm review. (Image: CERN)

On the 10th and 11th of December, the MSCA EASITrain network on advanced Superconductivity and Cryogenics hold its midterm review in Brussels, Belgium. The meeting offered the opportunity to the 15 young researchers (ESRs) to present their latest

scientific results and reflect on the immediate application and market potential that these technologies can languish. Moreover, the ESRs and their supervisors met with the EU project officer, Mr. Ioannis Bitsios who offered his fruitful feedback about the progress of the project, answered their questions and suggested interesting directions for the future steps of the project.

The EASITrain project, also profits from synergies and collaborations with other EU H2020 projects. Research under EASITrain contributes to the feasibility studies of very high-field superconducting magnets, high-quality and cost-effective superconducting RF systems and on novel approaches for large-scale energy-efficient cryogenic refrigerations. These are all key technologies for more performant future particle collider while they can be utilized in many other fields; from power distribution and energy recovering to medical applications and food quality monitoring.

The event started with a comprehensive overview of the project by Dr. Johannes Gutleber, covering the key technological challenges and offering a review of the established collaboration network. In his presentation he emphasized that “one of the biggest impacts is that the effective training of early-stage researchers generates significant economic and societal benefits by increasing the lifetime salary premium for individuals, attracting global talent and increasing the competitiveness of Europe’s scientific potential”. The presentation stimulated interesting discussions on the scope and impact of this network and the synergies with other H2020 projects as well as on ways to further improve the communication of results; a key component of this work.

In a series of presentations throughout the day, ESRs offered a quick overview of their work and how they efficiently use resources to tackle open technical challenges and find solutions that move the cost/performance needle of these technologies in the right direction. Their talks confirmed the innovative potential of these technologies and that much value will be gained both for the students and for the academic and industrial partners through their participation in this network.

The ESRs highlighted that every time research and development (R&D) achieves an advance in performance and a reduction in the cost, opportunities to leverage superconductivity and cryogenics into bigger markets are multiplied. The best way to manage the risk inherent to these technologies R&D development challenge is to share it via collaborative R&D profiting from established network and CERN’s long history in the development of superconductivity and cryogenics.

It was also evident that through their participation in the EASITrain network, young researchers profit from broader networks and the chance to participate in high-profile scientific meetings. In the past twelve months, the researches were offered many opportunities to attend scientific schools and conferences around the world, thereby growing their professional network and expose to fresh ideas and learning the latest

developments in the field. Stewart Leith, one of the ESRs succinctly summarized this spirit: "It is a great experience to meet like-minded young scientists who are all pushing each other to produce the best research possible. A great way to push your career forwards and make a real impact to the world.

With the attention that EASITrain brings to superconductivity and cryogenics and appropriate technical progress through R&D, there are good reasons to envision not only a bright future for fundamental research in high-energy physics but also a "green" transformation for many industrial and domestic activities. The enabling - and often disruptive- potential of these technologies enable to deal with the most pressing problems that we face today. All this will be treacherous territory to navigate, and there will no doubt be missteps along the way. By exploring these technologies and training the future scientists and engineers to push their limits EASITrain marks a journey of creativity and exploration.