

INTERACT PROJECT (www.interact.utcluj.ro)

In today's economy, more than ever, the need to implement the sustainability principle in designing new products has become of utmost importance. Sustainability represents nowadays innovation's new frontier. Becoming environmentally friendly through the development of sustainable products, the industrial actors end up by reducing inputs they use and, thus, lower the costs. Moreover, with better "greener" products, additional revenues are generated. As the automotive industry is one of the most technologically interesting domains to face the societal challenges, the automotive manufacturers are accelerating the development of new sustainable technologies for products to comply with the most stringent standards of efficiency, reliability, safety and sustainability. The trend for more electrified automotive applications (MEAAs) asks for a new generation of automotive electrical actuation systems, allowing for a more efficient and environmentally friendly mobility and enhancing the driving experience, making it safer, more comfortable and sustainable.

INTERACT's overall objective is to answer the further enhancement of the next generation of high-performance sustainable automotive electric actuators (SAEAs) by combining high-level scientific research and training activities in a joint academia-industry doctoral programme, focused on solving critical issues of the automotive electrical actuation Research & Development (R&D) cycle.

The project is a natural continuation of a fruitful collaboration between the beneficiaries: two universities, Technical University of Cluj-Napoca and Universite Libre de Bruxelles, and three industrial actors: Siemens Induatry Software NV Leuven, Belgium; Brose Fahrzeugteile GmbH & Co. Kommanditgesellschaft, Wurzburg, Germany and iCPA SA Bucharest. What started as staff exchange collaboration for technological know-how and transfer of knowledge in the field of electrical machines (EMs) and drives (EMDs) for automotive applications has now developed, through INTERACT, into a joint doctoral programme, based on common interests and goals, in the field of R&D of the next generation of SAEAs. More specifically, INTERACT takes advantage of the well-established intersectoral collaboration achievements and of the solid research and training competences and facilities at the beneficiaries for: (i) giving new career perspectives and increasing the employability of six young researchers, by enhancing their creative and innovative potential; (ii) pushing forward and/or extend the industrial partners' portfolio with new technological developments to be integrated into the R&D process such that they remain and/or enter as an important player in the automotive industry.

It is clear that energy-efficient, reliable, robust, low-cost and low-noise electrical machines, along with highly-integrated, energy-efficient power electronics and control modules, are required in order to reduce the impact of automotive electrical actuated powertrain and/or auxiliaries on the overall performance and cost of vehicles, no matter if they are fuel- (fossil or alternative), hybrid- or electric-powered. INTERACT aims at the development of R&D and engineering specialists and services to deal with the design and development of advanced electrical actuation technologies for sustainable automotive applications.