

Advanced robotics and mechatronics symposium sparks collaboration

Several national initiatives and collaborations were generated following the first symposium for Advanced Robotics and Mechatronics, which was co-hosted by the CSIR in November.

Engineering faculties from universities in South Africa presented and shared their work at both undergraduate and postgraduate level to ascertain the current status of research in this field in South Africa and more than 150 delegates from industry, academia and government attended.



Initiatives and collaborations that were forged include a national project, spearheaded by CSIR Materials Science and Manufacturing and the University of KwaZulu-Natal (UKZN), to develop an autonomous car as a technology demonstrator, showcasing the robotics and mechatronic skills in South Africa. The aim is to enter the next DARPA challenge as Team South Africa.

The DARPA challenge is an autonomous vehicle research and development programme featuring autonomous ground vehicles manoeuvring in a mock city environment, navigating traffic circles, negotiating busy intersections and avoiding obstacles and other vehicles. This will create many spin-off technologies that can be used in manufacturing and other industries.

These two institutions will embark on a national roadshow to inform and invite industry and universities to participate in the project and to secure funding.

Both government and industry participated actively in the symposium and apart from establishing a network with academia, the Gauteng Provincial Government committed to including robotics and mechatronics in its tooling initiative. Invitations to suggest and discuss possible collaborative projects were issued. Industry has also undertaken to collaborate with education authorities to create awareness of and training for young engineers.

Advanced robotics has emerged as an important technical domain over the past two decades. Robotics and mechatronics comprise sensors, software and computers embedded in machines and devices that bring the power of computing technology into everyday practices. Together, the technologies emulate and enhance the human ability to perceive reason, take decisions and act. This allows machines and devices to anticipate requirements and deal with environments that are complex, unknown and unpredictable.

A research network for advanced robotics and mechatronics was also recently established between the CSIR and the UKZN. The advanced robotic research group of the CSIR has partnered with Professor Glen Bright of the UKZN to increase collaboration and enhance knowledge-sharing in this domain. The establishment of the Advanced Robotics and Mechatronics Research Network (ARMRN) allows the sharing of expensive infrastructure, while contributing to human capital development through studentships at the CSIR.

The symposium was sponsored by the Department of Science and Technology's Advanced Manufacturing

Technology Strategy (AMTS) implementation unit, which is hosted by the CSIR. Co-hosts were the UKZN and the Central University of Technology (CUT).

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