CSIR General News

Nelson Mandela Bay Municipality invests in research for automotive industry

The Nelson Mandela Bay Municipality (NMBM) has been dubbed the `Detroit of South Africa' by some because of the key role it plays in the car-manufacturing and vehicle assembling industry. A new research initiative involving the CSIR, the Automotive Industry Development Centre (AIDC) and the Nelson Mandela Metropolitan University (NMMU), is set to ensure that the city further enhances its capabilities in this domain. The Metro has now launched the first project within this research initiative to address the longer term needs of its automotive industry.

Representatives of the Eastern Cape's Automotive Centre of Excellence.
Right to left: Professor Danie Hattingh (NMMU), Ms Belu Mabandla (NMBM) and Dr Neil Trollip (CSIR)

As part of its 2020 Citywide Economic Development Strategy, the NMBM identified the need for a coordinated research effort focused on the longer term technology needs of the automotive industry in the Metro. The AIDC and the CSIR were contracted to confirm the validity of such an initiative, identify the optimal research focus and launch specific research projects.

The first phase - which has been completed - involved the preparation of an Automotive Technology Roadmap through a participative process. The outcome of this exercise was considered, together with the drivers of comparative advantage in Nelson Mandela Bay, to arrive at a research focus on lightweight materials, with a specific emphasis on light metals and composites.

This focus is in line with the key trend towards vehicle weight reduction. It also builds on R&D initiatives and technological capabilities that currently exist in the Metro, and is aligned with the light metals cluster that is planned for Coega.

The first two research projects, "The analysis of the effect of friction stir welding on MIG - Laser hybrid welded aluminum plate " and "Laser cladding of light metals" will reside in the Engineering Faculty of the University. There it links well with other automotive-related initiatives, including the Automotive Components Technology Station and the Advanced Mechatronics Technology Centre. Funded by the national Advanced Metals Initiative (AMI), the project has a dual focus on the joining of light metals through friction stir welding, and laser cladding.

Dr Neil Trollip of the CSIR is coordinating the establishment of the strategic research initiative and explains the approach as follows, "Research projects that form part of the initiative are aimed at generating new knowledge that can be applied in the development of innovative technologies which enhance the competitiveness of the local industry. The long-term focus is a deliberate one, since there are various other initiatives and programmes addressing the immediate and short-term needs of the industry ".

"Research projects will typically run for a number of years and will be guided and reviewed by panels comprising industry and technology experts. Knowledge transfer to the local industry and broader scientific community will be achieved through conferences and seminars, scientific publications, media releases and ongoing personal interactions. "

Professor Danie Hattingh of the NMMU says, "The light metals project is particularly exciting since it incorporates a strong element of human resource development through the involvement of three Masters

students and placement of world-renowned experts at our University for a period of time. Visits to research institutes abroad by the students and NMMU research staff are also planned".

About the way forward, Trollip says, "Various other projects are being considered to form part of this initiative, and it is possible that a Centre of Excellence will result in the future. The various projects will be coordinated as a network of related research activities, involving the CSIR, NMMU and other institutes with complementary science and technology capabilities. Partnerships and collaborations are critically important for successful research and innovation and thus we wish to tap into suitable expertise that exists elsewhere in the Metro, province and South Africa".

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