CURRENT PROJECTS

Some of the current projects include the production of nano-clays such as organophilic bentonite, synthetic hectorite and hydrotalcite, and their application in polymers and cosmetics. The NIDF is also assisting two Industry Development Corporation (IDC) supported start-up companies with the development of nano calcium carbonate and carbon nanotube production processes.

SAFETY, HEALTH AND THE ENVIRONMENT (SHE)

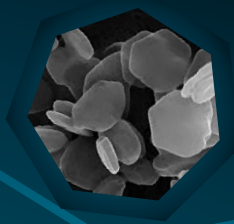
The NIDF is well aware that nanotechnology and particularly the use of nanostructures in products is something new to the South African industry. For that reason the NIDF also assists users to identify and mitigate potential health and safety aspects of a particular nanotechnology, through collaborative efforts with local universities. Being part of the DST-CSIR National Centre for Nanostructured Materials, the NIDF has established a Safety, Health and Environmental (SHE) system that plays a critical role in identifying and successfully managing these issues.

ACCESSING THE NIDF

The NIDF is overseen by an advisory panel and managed by a steering committee which evaluates proposals on merit and availability of resources. While it is generally expected that users of the facility will contribute towards the costs, the NIDF can especially assist SMMEs to access available funding sources. The NIDF is open to receiving proposals at any time for consideration by the steering committee which meets quarterly.

Please contact us to find out if we can assist you:

DST-CSIR Nanomaterials Industrial Development Programme
DST-CSIR Nanotechnology Innovation Centre
Council for Scientific and Industrial Research
1 Meiring Naude Road, Brummeria, 0184
PO Box 395, Pretoria, 0001
012 841 4738, mrscriba@csir.co.za



DST-CSIR NANOMATERIALS INDUSTRIAL DEVELOPMENT FACILITY (NIDF)

Research and innovation partnerships for industrialisation

science & technology
Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

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NANOMATERIALS INDUSTRIAL DEVELOPMENT FACILITY (NIDF)

The CSIR together with the Department of Science and Technology (DST) established the Nanomaterials Industrial Development Facility (NIDF) to enable industry, research entities and small, medium and micro enterprises (SMMEs) to develop and scale up high-tech materials. The CSIR's focus at present is on using nanotechnology as a key enabler in polymer, cosmetics and other chemical related products.

NIDF'S OBJECTIVES AND OFFERING

The NIDF offers an integrated access to three key research and development components, namely scale-up facilities, well equipped characterisation laboroties and multi-disciplinary researchers. The facility was specifically designed to enable the transition from laboratory to industrial scale. The chemical processing plant is equipped with high temperature and pressure chemical reactors, process tanks, a filter press, dryers and a bag house. In the polymer formulation and processing facility, there is a 40 L/D co-rotating twin screw extruder, 500kN injection moulding machine, a 5-layer cast sheet and blown film co-extrusion line and other smaller processing equipment. Finally, the characterisation facilities available to users of the NIDF include all typical polymer characterisation and testing equipment as well as highly specialised instruments such as scanning and transmission electron microscopes which allow material investigations at the nano-level (one nanometre is a million times smaller than a millimetre).

The NIDF offers support to both SMMEs and big companies alike by assisting with scaling up of operations, including further process/technology optimisation, to produce sufficient quantities of material to enable companies to test and develop the market. In addition, its researchers and engineers can help with the development of material applications as well as their characterisation and testing. It must however be emphasised that the NIDF is not able to provide SABS certification at this stage.

USERS OF THE NIDF BENEFIT SUBSTANTIALLY

Scaling-up is a mandatory step in the commercialisation of scientific research and the NIDF thus plays a key role in the production of products in sufficient quantities for quality and market testing. It also provides the environment to undertake reliable cost estimation and capital budgeting analysis. In addition, users are able to generate design data for a future commercial plant and mitigate risks relating to their processes and technologies. The NIDF also prides itself by providing training and industry-ready learning to many interns.