NANOMATERIALS INDUSTRIAL DEVELOPMENT FACILITY

WORK WITH US:

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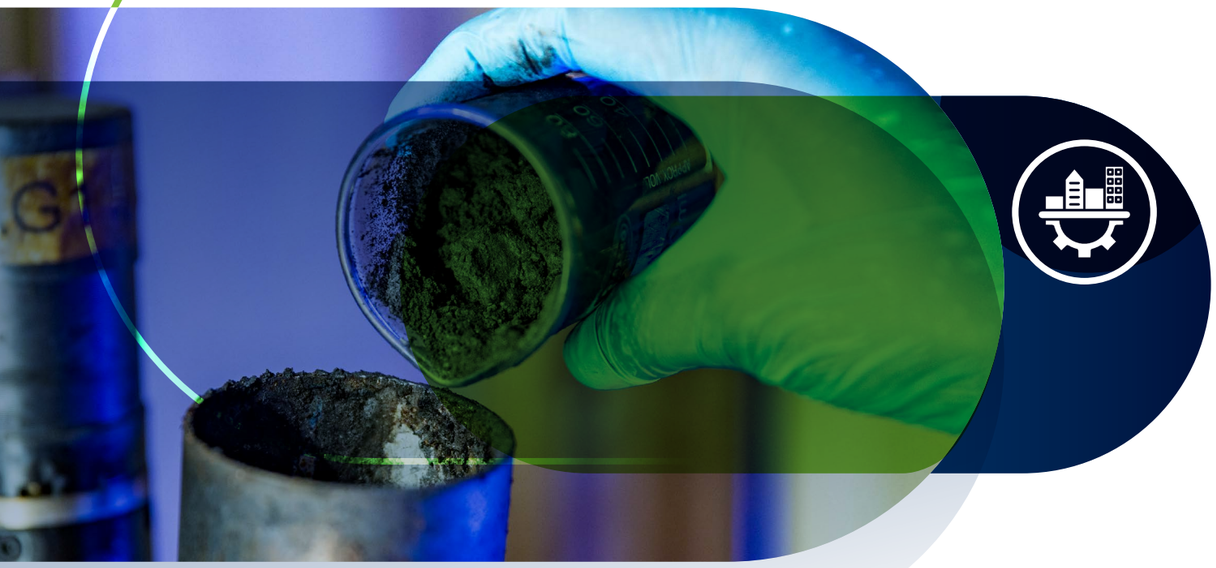

NANOMATERIALS INDUSTRIAL DEVELOPMENT FACILITY

The CSIR Nanomaterials Industrial Development Facility (NIDF), which is based in Pretoria, offers an integrated access to three key research and development components, namely scale-up facilities, well equipped characterisation laboratories and multi-disciplinary researchers. The facility is specifically designed to enable the transition from laboratory to industrial scale and ultimately industrialisation of products and technologies.

The NIDF manufactures and supplies advanced nano and micro materials, including graphene oxide (GO), reduced graphene oxide (rGO), hydrotalcites, modified bentonite clays, nano zinc oxide and metal organic frameworks (MOFs).

The NIDF team consists of chemical engineers, researchers, polymer chemists, nanotechnology specialists and formulation scientists who apply their knowledge to assist enterprises from prototype to pilot scale production.

NIDF INFRASTRUCTURE AND CAPABILITIES

The NIDF infrastructure comprises a chemical processing plant that is equipped with high temperature and pressure chemical reactors, process tanks, a filter press, dryers, and a baghouse.

GRAPHENE TECHNOLOGY DEVELOPMENT

The NIDF has developed a graphene synthesis technology platform that is cost-effective and accessible to local businesses. This platform stands out in terms of affordability when compared to the typical international market prices.

Graphene is considered an advanced material that will have a big impact in many industries, including composites, electronics, biomedical and healthcare, batteries and advanced materials. Despite its potential applications in a wide range of industries owing to its unique physico-chemical properties, the exorbitant international graphene market price has had negative effects on its commercialisation. To date, the group has utilised vast nanotechnology capabilities to develop cost effective graphene technologies, since the establishment of the Graphene Platform in 2019.

The CSIR graphene synthesis technology was successfully optimised and demonstrated at a higher technology readiness level at a 1 kg graphite batch scale, producing two main products: graphene oxide and reduced graphene oxide.

OFFERING TO INDUSTRY

Local industry is called upon to exploit the CSIR developed graphene synthesis technology platform in order to enhance their competitiveness by making new products or enhancing the properties of existing products.