

# 1<sup>st</sup> INTERNATIONAL WORKSHOP ON NANOENGINEERED MATERIALS

24 – 26 May 2015

Tshwane University of Technology,  
Pretoria, South Africa

**CALL FOR WORKSHOP  
PARTICIPATION**

Sponsored By

## Introduction

The Institute for NanoEngineering Research at the Tshwane University of Technology wishes to invite you to participate in the 1<sup>st</sup> International Workshop on Nanoengineered Materials to be held in Pretoria, South Africa, from 24 to 26 May 2015. This workshop is organised to officially launch the Institute and to showcase its unique strategic research focus and direction. The Institute focuses on integrating the fundamentals of the interdisciplinary sciences with all aspects of nanoscale and nanoengineered materials processing, as well as their characteristics, as applied to innovations in process technologies, engineering materials development and fabrication of components for a variety of engineering applications.

## Aim of the workshop

As nanoengineering is seen to be a middle stage in a full spectrum of technological developments from nanoscience to nanotechnology through to commercialisation, the Institute for NanoEngineering Research aims to create an environment that will foster research innovation and skills development in nanoengineering. The Institute also seeks to promote interdisciplinary collaborative research and technology transfer between academia and relevant industries for commercial applications. This workshop on Nanoengineered Materials aims to bring together international specialists working in the areas of nanoengineered materials and innovations, to discuss the challenges of nanoengineered materials and the new frontiers in advanced materials for wide range of engineering applications. It also hopes to provide platform for scientific and technical exchange with international collaborators to enhance knowledge, skills, and progress of nanoengineering, with special focus on providing solutions to African technological challenges. Owing to the relatively small size and specialised nature of the workshop, a highly motivating atmosphere that will seek to enhance technological and intellectual exchange is anticipated

## Workshop Thematic Areas

- Health and nano-medicine
- Water treatment technologies
- Electronics and Energy storage
- Advanced metallic alloys and ceramics
- Technology policy and innovation

## Workshop participation

The following keynote speakers have been specifically invited to present their research findings in the field of nanoengineered materials:

### •Prof Claude, Estournes

Inter-University Centre for Research and Engineering of Materials  
University of Toulouse, France

**Topic:** Spark plasma sintering: from evidence of specific effects to the elaboration of complex architectures and shapes

### •Prof Suprakas Sinha Ray

National Centre for Nanostructured Materials  
Council for Scientific and Industrial Research, Pretoria

**Topic:** Polymer-based nanoengineered materials: Shaping the future of plastic industry

- **Dr Robert Tshikhudo**  
Competency Manager, Titanium Centre of Competence  
Council for Scientific and Industrial Research, Pretoria  
**Topic: To be decided**
- **Dr Sophie Guillemet-Fritsch**  
Inter-University Centre for Research and Engineering of Materials  
University of Toulouse, France  
**Topic:** Combining soft chemistry and Spark Plasma Sintering to produce high-tech nanostructured oxide electroceramics
- **Prof Ahmed Abd El-Moneim**  
Materials Science and Engineering Department  
Egypt-Japan University of Science and Technology  
**Topic:** Flexible Graphene-based materials for the microfabrication of supercapacitor, gas sensor, strain gauge sensor, solar cell and localized thermal heater
- **Dr David Dodoo-Arhin**  
Department of Materials Science and Engineering  
University of Ghana  
**Topic:** Graphene based dye sensitized solar cells
- **Dr Berhanu Tulu Kacha**  
Department of Applied Physics, College of Natural and Computational Science  
University of Gondar, Ethiopia  
**Topic:** Forming-Free Resistive Switching Characteristics of nanostructured Multicomponent Oxide Thin Film for Nonvolatile Memory Applications
- **Dr Tadesse Guadu Delele**  
Director: Directorate of Research and Publication  
University of Gondar, Ethiopia  
**Topic:** The Role of Nano Materials to sustain the deteriorating Fasil Castle in Ethiopia
- **Prof Rotimi Sadiku**  
Department of Chemical, Metallurgical and Materials Engineering  
Tshwane University of Technology, Pretoria,  
**Topic:** Stimuli responsive polymeric nanogels network as cargo systems for loading and release of hydrophobic and hydrophilic anti-cancer drugs
- **Prof Mammo Muchie**  
DST/NRF Research Chair in Innovation Studies  
Tshwane University of Technology, Pretoria,  
**Topic:** Innovating nanoengineered advanced materials
- **Prof Maurice Onyango**  
Department of Chemical, Metallurgical and Materials Engineering  
Tshwane University of Technology, Pretoria,  
**Topic:** Adsorption Technology in Improving Water Quality: A shift Towards the Use of Nanostructures

Besides the invited keynote speakers, the workshop is open to participants who wish to present the results of their studies as short oral or poster presentation. We are therefore offering opportunity for participants to submit oral or poster presentation proposals that relate to the emerging fields of nanoscience, nanotechnology and nanoengineering and their impacts on social-economic development and the environment. If you intend to give a short oral presentation or a poster, please submit a title and an abstract (not longer than 200 words excluding title, authors and affiliations) together with your workshop application.

Since the number of participants for this workshop is limited, a maximum number of 10 short presentations and 20 posters will be permitted. Contributors are therefore advised to apply before 5 May 2015. Applications will be processed in order of registration. Selected oral and poster presenters will be invited to submit full-length manuscript for peer reviewing and publication as special issue of the TUT's DHET accredited Taylor & Francis published journal "African Journal of Science, Technology and Innovation for Development (AJSTID)" (<https://twitter.com/ajstid1>).

#### Pre-workshop technical training

A pre-workshop technical training that is focused on Light Scattering, X-Ray Diffraction, and Scanning Electron Microscopy techniques in the characterisation of nanoparticles and nanostructured materials is organised for 21 and 23 May. The training is intended for graduate students or researchers working on nanoscience and nanoengineering related research. A maximum of 30 delegates can be accommodated to ensure maximal individual attention. Instructors includes:

- **Dr James Wesley-Smith:** National Centre for Nanostructured Materials, CSIR, Pretoria
- **Dr Sabine Verryn;** PANalytical/XRD Analytical and Consulting
- **Dr David Dodoo-Arhin;** University of Ghana

#### Application for workshop participation

Participation in the workshop is free of charge, but all participants (except the invited plenary speakers) must cover their own transportation and accommodation costs. For registration, please complete the form below and send together with your abstract on or before 5 May 2015, to [nanotech@tut.ac.za](mailto:nanotech@tut.ac.za). After registration you will receive a confirmation. Further information about this workshop can be obtained from Ms Happy Nkwanyana ([NkwanyanaTN@tut.ac.za](mailto:NkwanyanaTN@tut.ac.za); +27123823552)

#### Local organising committee

Dr Peter Olubambi; Director: Institute for NanoEngineering Research, TUT  
Prof Mammo Muchie; DST/NRF Research Chair in Innovation Studies, TUT  
Dr Joseph Kwaku Ofori Asante; Department of Physics, TUT  
Dr Bolanle Abe; Department of Electrical Engineering, TUT  
Dr Ronald Machaka; Materials Science & Manufacturing, CSIR, Pretoria  
Dr Enoch Ogunmuyiwa; Department of Civil & Chemical Engineering, UNISA  
Ms Mercy Ramakovhu; Department of Chemical, Metallurgical & Materials Engineering, TUT  
Dr Taile Yvonne Leswif; Department of Chemical, Metallurgical & Materials Engineering, TUT

*We hope to see you at this relatively small size and specialised workshop, with a highly motivating atmosphere that will seek to enhance technological and intellectual exchange.*

**Best regards**

**Dr Peter Olubambi**

Workshop Chair & Director: Institute for NanoEngineering Research  
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**DRAFT STRUCTURE OF ACTIVITIES**

Day	Activities		
	Morning	Afternoon	Evening
21 May	Training on electron microscopy techniques in nanomaterials characterisation		
22 May	Training on X-Ray Diffraction techniques in nanomaterials characterisation		
23 May	<ul style="list-style-type: none"> <li>University Open Day</li> <li>Laboratory tours</li> </ul>	Training on light scattering techniques in nano-particles characterisation	
24 May		Welcoming cocktails and networking	
25 May	Plenaries	<ul style="list-style-type: none"> <li>Institute Launching</li> <li>Poster sessions</li> </ul>	
26 May	Plenaries	Plenaries	Networking Dinner

**1ST INTERNATIONAL WORKSHOP ON NANOENGINEERED MATERIALS**  
[REGISTRATION FORM]

Surname \_\_\_\_\_

First Name \_\_\_\_\_

Institution \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ Postal Code \_\_\_\_\_

Country \_\_\_\_\_

Phone \_\_\_\_\_

E-mail \_\_\_\_\_

Special Dietary or Accessibility Needs: \_\_\_\_\_

I will be attending as: PARTICIPANT PRESENTER

Delegate

Oral

Postgraduate Student

Poster

Undergraduate Student

\*Title of Paper: \_\_\_\_\_

I will attend the pre-workshop technical training [21-23 May]

I will attend the welcoming event [evening of May 24]

Date \_\_\_\_\_ Signature \_\_\_\_\_