

CAREER OPPORTUNITY

The Council for Scientific and Industrial Research (CSIR) is a leading scientific and technology research organisation, implementing projects throughout Africa and making a difference in people's lives.

Doctoral Studentships x 2

About the Job:

The CSIR has opportunities for **PhD Studentships** in the National Centre for Nanostructured Materials within the Materials Science and Manufacturing (MSM) unit. One of the Centre's key research focus areas is the advanced materials for gas sensing applications by using metal oxides nanostructured materials. These positions are based in Pretoria

About the Unit:

The Centre undertakes innovative research on nanostructured materials and has an extensive research network with other local and international research organizations. It is well equipped with cutting-edge nanostructured materials synthesis, processing, characterization and testing facilities. In addition, there are nanostructures scale-up and industrial-scale polymer processing and product development facilities. It has a strong focus on human capital development, makes a significant contribution to the creation and dissemination of new scientific knowledge, and collaborates closely with industry to help ensure successful outcomes and impact of the group's research and development activities.

Key responsibilities:

- In depth understanding of the relation between the p-type and n-type metal oxide nanostructures
- Focuses on the influence of hetero-structure of the p-n, n-p-n and n-n inversion on the gas sensitivity and selectivity
- Investigate the In-situ EPR gas sensing properties of metal oxides
- Testing nanostructured materials for gas sensing on several gas gases (VOCs, ammonia, methane, carbon monoxide, hydrogen, etc.) with the idea of refining the selectivity, sensitivity, stability, etc.
- Focuses on the influence of humidity on the metal oxide surface
- Ability to demonstrate electronic design implementations and prototypes

Qualifications, skills and experience:

- An MSc or equivalent in Device Physics, Physics, Chemistry.
- Must have knowledge on the synthesis of metal oxide Nano-structured materials.

- Basic experience on analytical techniques such as photoluminescence (PL), atomic force microscopy (AFM), micro-Raman, X-ray photoelectron spectroscopy (XPS), electron paramagnetic resonance (EPR), gas testing station
- Must have a basic knowledge on surface science.
- Must have published one or two articles during his/her Master's degree
- Research and report-writing skills.
- Problem-solving skills.
- Solution-seeking orientation.
- Excellent facilitation and interpersonal skills.
- A goal-oriented approach.
- Ability to work independently as well as in teams.
- Computer literacy.

Should you meet the above requirements, please email your CV to jobapplications@csir.co.za with your name and surname, position title and reference number in the subject line, **(e.g. John Smith: Job title: Reference No: 308045)**

Closing date: 21 May 2017

PLEASE NOTE THAT FEEDBACK WILL BE GIVEN TO SHORTLISTED CANDIDATES ONLY.

For more info, please contact the CSIR Recruitment Centre on **012 841 4774** or email us at Recruitmentinfo@csir.co.za

*The CSIR is an equal opportunity employer. As such, it is committed to the Employment Equity Act of 1998. By applying for this position at the CSIR, the applicant understands, consents and agrees that the CSIR may solicit a credit and criminal report from a registered credit bureau and/or SAPS (in relation to positions that require trust and honesty and/or entail the handling of cash or finances) and may also verify the applicant's educational qualifications and employment history. **The CSIR reserves the right to remove the advertisement at any time before the stated closing date and it further reserves the right not to appoint if a suitable candidate is not identified.***