

## Materials science and manufacturing

### Physics conference brings award for CSIR

A postdoctoral student from the National Centre for Nano-structured Materials walked away with the Goodfellow PhD Publication Award at the 54th Annual Conference of the South African Institute of Physics (SAIP).

Simon Dhlamini's winning paper, titled 'Photoluminescence properties of powder and pulsed laser deposited PbS nanoparticles in SiO<sub>2</sub>' was entered into the competition under the category for condensed matter physics and materials science. This paper was originally published in the Journal of Luminescence.

Dhlamini's work entails the preparation or synthesis and characterisation of nanoparticle/nanocomposite phosphors using different synthetic methods (e.g. sol-gel). A phosphor is a luminescent material that emits light under some type of external stimulation, which can be an electron beam or photons. They are usually in the form of powders but in some cases, thin films.

"The phosphor material can be doped intentionally with impurities to emit the desired wavelength of light. They are critical to the development and improvement of display technologies and biological labelling. The production of phosphor particles of smaller sizes is necessary for the realisation of high resolution images, and therefore the development of phosphor fine particles with stronger emission intensities has been expected," he explains.

According to Dhlamini, this award comes as a motivation and a challenge at the same time, especially since he is a young, upcoming research scientist. "I also see it as an acknowledgement of my work by my peers. Of course, this award makes me feel proud of the work that I am doing and shows that if I can do it, anybody can."

He says that knowledge in this new field of science (nano-science) is growing worldwide and leading to fundamental scientific advances. "This will lead to dramatic changes in the ways that materials, devices and systems are understood and created. This technology is expected to be the primary driver of the 21st century and the new economy."

The 54th annual conference of the SAIP was held from 7 to 10 July 2009, at the University of KwaZulu-Natal (Westville Campus), Durban. The SAIP was established in July 1955 and strives to, among others, promote studies and research in physics and related subjects and encourage applications thereof; and further the exchange of knowledge among physicists by means of publications and conferences.



Simon Dhlamini, a postdoctoral student from the National Centre for Nano-structured Materials, who won the Goodfellow PhD Publication Award at the 54th Annual Conference of the South African Institute of Physics (SAIP).

- Kelly-Anne Matthews

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