

## CHAIR TALK

EDITION: 5

NOVEMBER 2010

### WORD FROM THE CHAIR



Prof Theo van Niekerk

It's with great pleasure that I welcome you to the new look edition of "Chair Talk", where we look to brief you the reader on our progress and highlight some activities over the past 6 months.

The VWSA / DAAD Chair collaboration has once again shown its worth through a number of VW projects that have allowed several students to gain first hand experience in solving industry problems and developing new initiatives. Manufacturing and Planning at VWSA have also approached the Chair for several new very innovative projects in 2011.

The need to work closer with suppliers in the automotive industry still remain a challenge. A first project being the development and presentation of a one week workshop by industry specialist on water and energy management. The response was overwhelming, with the workshop setting the tone for annual workshops within this challenging field that face our region. A special word of thanks to the members of the PERCCI task team on Energy, Mr Angus Clark (GMSA) and Nic Chapman (VWSA), for their invaluable input.

I'm off to Wolfsburg to work with our post graduate students. We would like to wish our readers and colleagues all of the best for the festive season. Safe traveling and also enjoy the time spent with family and friends.

### VW Racing supports NMMU Students to Build 1<sup>st</sup> Frame

The NMMU Formula Student Racing vehicle project, which is regarded as one of the VWSA / DAAD Chair's flag ship projects, was launched in 2008 with the aim of building a racing vehicle that could compete against tertiary institutions from across the globe.



NMMU Formula student racing team with the completed vehicle

order to compete in the annual Knysna Hill climb challenge from 22—24 October.

"It was an unbelievable experience to finally get behind the steering wheel of the NMMU's first racing vehicle after years of planning and hard work" said VW Racing employee and NMMU racing team member, Mr Hiten Parmar.

We would like to congratulate the NMMU Racing team on its exceptional achievement on becoming the first South African university to successfully design and build a small racing vehicle.

To see the NMMU Formula student team in action during the Knysna event, please follow the link below.  
<http://www.youtube.com/watch?v=I5kU2UBpi9M>

With the support of VW Racing, the NMMU racing group recently completed the vehicle in

# Water and Energy Management Workshop

With a worldwide focus on saving the environment and available resources, the VWSA / DAAD Chair in collaboration with the South African Institute for Electrical Engineers (SAIEE), Eskom, Siemens South Africa, the Port Elizabeth Regional Chamber of Commerce and Industry (PERCCI), Schneider Electric, General Motors South Africa and the Automotive Industry Development Centre (AIDC) presented a workshop on Water and Energy Management.

The five day workshop was presented by key industry role players and specialist. The workshop was specifically designed with suppliers in the automotive

**“ I will take the knowledge that I have gained back to the company so that all staff can fully understand the severity of the situation - Dawie Fourie ”**

industry in mind, with the proposed increases in water and elec-

tricity tariffs to have the most significant impact on these organisations.

The group gained valuable insight into energy and water saving strategies as well as the numerous benefits associated with accurate measuring, data collection and information interpretation. These

strategies will not only assure global competitiveness but will also play an important role in alleviating the current energy and water crisis in South Africa.

The workshop concluded with a breakfast on the final morning after which course attendees had the opportunity to pose questions to a panel of industry specialist. This allowed attendees to get a better insight into the problems experienced in their respective working environments and get feedback from the panel on the various means available to solving the problems at hand.



**From left to right: Theo van Niekerk (VWSA / DAAD Chair), Johan Barnard (NMMU), Gregory Ownhouse (AIDC), Sarel Schoombie (NMMU), Giles Alexander (Eskom), Nic Chapman (VWSA), Angus Clark (PERCCI & GMSA), Shaun Wilson and Barry Dawson (both Schneider Electric), Rene De Kock (Eskom).**

## Grade 12 Design competition

A Grade 12 Design competition was launched at the NMMU by Senior Mechanical Engineering Lecturer, Mr Howard Theunissen, with the aim of attracting top learners to study an engineering discipline at the NMMU in 2011. The competition was aimed at schools in the Eastern and South Western Cape, whom present technical drawings (CAD) as part of its curriculum. Learners were required to design and build a small vehicle that could



travel the distance of a 2m track, touch the wall at the end of the track, and return back down the track breaking the plane of the original starting line.

The top three finishers all received two year bursaries to study towards an Diploma engineering qualification of choice at the NMMU. Apart from the project and marketing assistance provided by the VWSA / DAAD Chair, the unit also gave an additional R2000 bursary to each of the three learners.

**Standing at back from left to right: Mr Karl du Preez, Gregory Franck (overall winner) and Mr Howard Theunissen. Kneeling in front left to right: Fourie van der Westhuizen, (best report submitted), Thabo Swanepoel (2nd place winner).**



## New Course in Industrial Process Control presented to VW Paintshop Staff

Nelson Mandela Metropolitan University in collaboration with Siemens South Africa, recently hosted the very first Process Control (PID) course at the University.

The NMMU and Siemens have had a very successful collaboration over the past few years which saw the establishment of a Siemens training facility on the NMMU North Campus as well as the company getting involved in numerous student projects. The first process control course, 23 to 27 August 2010, was attended by four members from the Volkswagen Paint Shop plant in Uitenhage. The one week course focused on enabling service and commissioning personnel to work with analogue signals and effectively optimise control loops, which in turn adds value to the industry. This is the first time a course of this nature is presented in Port Elizabeth. The process control course, which was previously run in Johannesburg, will be hosted at NMMU again in 2011 where they hope to increase the number of industry participants.

"The course was successfully run and the feedback has been really positive from our first group of course attendees, and we will definitely be continuing with the PID course at NMMU", says Hennie van Rooyen, programme facilitator.

**Visit the NMMU website on  
[www.nmmu.ac.za/siemens](http://www.nmmu.ac.za/siemens) for  
course content and schedules**



Facilitator Mr Hennie van Rooyen with course attendees

## NMMU BEng student placed at VWSA

Top BEng student Mr Dave Minne is in the process of completing his final year project, which entails a "Coupled Tank Control System".

The tank system uses a three phase pump with a Siemens drive to regulate the flow of water into a tank. Once the water reaches a certain level the pump automatically switches off. The tank was also developed to deliver valve disturbances, which influences the water level of the tank. The pump will then automatically switch on again in order for the set water level to be restored.

The designed unit is also to be used in the NMMU / Siemens training facility as part of the newly introduced Process Control short course.

The components for the project were sponsored by Siemens South Africa as part of its continuous support to educational innovation .

"Considering the requirements of the Industry for Process Automation Engineers, we believe that the NMMU's focus on this discipline will go a long way in ensuring that the Eastern Cape has the resources available for large scale process plants planned for the near future." said Siemens Eastern Cape regional manager, Mr Martin Taverner.

Mr Minne will form part of the VWSA graduate recruitment programme, commencing in January 2011.



Left to right: Karl Du Preez (NMMU), Martin Taverner (Siemens), Dave Minne, Sakkie Du Preez (Siemens), Theo van Niekerk (NMMU)

# Volkswagen SOPAM presentation

Each year Volkswagen South Africa goes to tertiary institutions across the country to deliver a two hour presentation on Automotive Engineering to all first year engineering students.

Dr Andreas Tostmann, CEO of VW Slovakia and Co-founder of the VWSA / DAAD Chair at NMMU, and an Engineer by profession, took the students from the Electrical, Mechanical, Industrial and Mechatronics fields on a journey from Marketing, Product Engineering and Testing, to the various facets of Manufacturing, all seen from an Engineer's perspective.

The presentation also focuses on the latest technologies being implemented in the automotive manufacturing environment and on what students can expect when one-day working in the automotive engineering field.



Pictured from left to right: Harshal Nathoo (mechanical student), Mr Anthony Hunneyball (VWSA Manager: Human Resources), Dr Andreas Tostmann, (CEO of VW Slovakia), Akhona Mantashe (mechanical student) and Wade Schoeman



Volkswagen South Africa - DAAD  
**International Chair**  
in  
**Automotive Engineering**

*Leading new developments in energy systems,  
materials & manufacturing technology*

## Visiting Professor delivers presentation on Vehicle Acoustics at VW

One of the major benefits derived from the VWSA /DAAD Chair partnership is the constant sharing of knowledge and expertise.

On his recent visit to the NMMU, Professor Udo Becker from Ostfalia University delivered a two hour Technical Training presentation on Vehicle Acoustics.

The Chair will present an in-depth three day workshop on Vehicle Acoustics in the first week of February 2011.



Professor Becker during the presentation at VWSA

## NMMU students benefit from exchange programme

A group of four NMMU engineering students left for Ostfalia University in Wolfsburg, Germany as part of a 6 month exchange programme between the NMMU and Ostfalia University.

The students will attend a two week introductory German language course after which they will receive training and work on numerous projects with the students from our partner University.



From left to right: Pierre Scheepers, Sabrina Olivier, Sienceba Boqwana and Shaun Pretorius



## Partnership Develop Autotronics Learnership

Electrical Engineering lecturer, Mr Grant Phillips, in collaboration with the VWSA / DAAD Chair and the VWSA Technical Learning Academy is in the process of developing an NQF level 5 qualification in Autotronics (BUS systems) for industry. The qualification will educate attendees on Basic data communications, LIN and CAN bus systems. Mechatronics exchange students Mr Stefan Fundinger and Mr Daniel Mutscheller is currently developing electronic vehicle training units.



VWSA Technical Academy employees recently attended a planning session where students demonstrated the communications between electronic systems using vehicle components. Mr Gerald Hooper from the VWSA Technical Training academy stated the following: "Autotronic simulators will be constructed in the future and it will be used for the training of learners, apprentices, artisans, technicians and technical staff. It is also important that technical staff at Volkswagen dealers get exposed to this".

**Back from left to right: Matthew Ngxe, Gerald Hooper, Ewald Pitout (all VWSA), Grant Phillips, Karl Du Preez, Prof Theo van Niekerk (all NMMU). Front from left to right: Stefan Fundinger and Daniel Mutscheller (Reutlingen)**

## NMMU students to compete in SAIEE competition

Mechatronics student, Mr Riaan Swanepoel, and Mechanical Engineering exchange student from Ostfalia University, Mr Timo Droste, have worked together on a project termed "Pre-cooling measurement and control involving solar energy". A great deal of this project is devoted to accurate data capturing of different solar profiles in Port Elizabeth, where "heat-up" and "cool-down" curves are compared for different



**Left to right: Mr Droste and Mr Swanepoel with the testing vehicle**

weather conditions. The "Pre-cooling Control" part of the project involves the control of the temperature inside the passenger compartment of the vehicle.

Mr Swanepoel will submit the project as part of his final year BEng project, and together with Mr Droste will be competing in the annual South African Institute for Electrical Engineers (SAIEE) National Student Project Competition, to be held in Johannesburg on the 25th of November.

"The project has allowed me to gain valuable experience in the exciting field of solar energy" said Mr Swanepoel whom has been employed at Solar Reaction since October.

## New Chair vehicle

VWSA recently showed its commitment towards its successful collaboration with the NMMU and the German Academic Exchange Service (DAAD) by providing the Chair with a newly sponsored vehicle.

This is the second vehicle within a three year period sponsored by VWSA.

We would like to thank VWSA for its contribution and its continuous commitment towards the success of the VWSA / DAAD Chair at NMMU.



**From left to right: Prof Theo van Niekerk (Chair) with VWSA Training Manager: Mrs Liza Wilmot and EBEIT Dean Prof Henk De Jager**