



MSSA NEWS

Newsletter of the Microscopy Society of Southern Africa

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Dear Microscopy Community,

It gives me great pleasure to send this Special Edition of our new electronic **MSSA NEWS** out to everyone concerned. It is such an exciting time for the entire microscopy community with the launch of the new Centre for High Resolution Transmission Electron Microscopy (CHRTM) at the Nelson Mandela Metropolitan University. On 11 October, many guests braved the wind and rainy weather in Port Elizabeth for the most important microscopy-related event to date this year! It was a fantastic day with a number of interesting presentations included in the proceedings.

As a new feature in the MSSA News, we have included some information on equipment that has been funded by the Department of Science and Technology in partnership with the National Research Foundation of South Africa through especially the Strategic Platforms Programme. This feature will link you to the NRF Equipment Database and the various specialised equipment facilities that are available for use to our post-graduate students and independent researchers.

'Focus on a Lab' features different microscopy laboratories- their history and also highlights various areas of expertise available within the country. We hope that this will promote greater collaboration between the microscopy-related disciplines and use of our new equipment nationally.

We thank our industry partners also for their interest in developing microscopy in South Africa, and have included various articles that need to be shared with the Microscopy Society at large. We would also like to invite all microscopists to join us at the MSSA 2011 conference from 6-9 December at the CSIR Conference Centre in Pretoria.

I do hope that you will enjoy the new introductions and features to this Newsletter, and urge everyone to become involved in order to ensure continued success and outreach of the MSSA News. Kindly submit all relevant news (exciting applications of microscopy in your lab, job advertisements, post doctoral opportunities etc.) and information directly to me at the contact details included below.

I look forward to hearing from you,

Chant lle Baker (Ph.D)

Editor



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Or visit
<http://www.microscopy.org.za/>

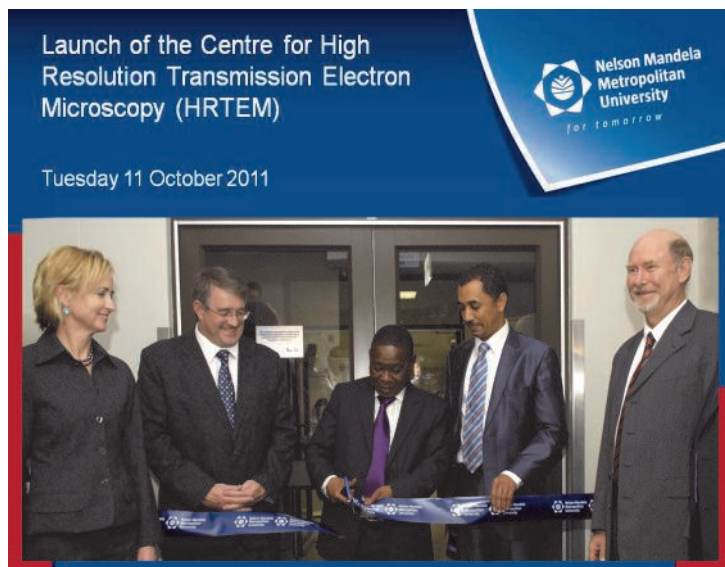
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Launch of Centre for High Resolution Transmission Electron Microscopy

On 11 October 2011, the new Centre for High Resolution Transmission Electron Microscopy (Centre for HRTEM) at the Nelson Mandela Metropolitan University (NMMU) was officially opened by the honourable Minister of Higher Education and Training, Dr Blade Nzimande. With great excitement, the VIP guests and others were witness to this proud event via a video feed to the Conference Centre at the North Campus of the NMMU. Thereafter the internationally renowned NMMU choir provided some wonderful entertainment before all guests attended a special luncheon at the venue.

Prof Derrick Swartz (Vice-Chancellor, NMMU) congratulated Prof Jan Neethling (Director of the CHRTEM) on establishing this specialised facility at the NMMU – the Centre will play a crucial role in the research and development of nanomaterials in South Africa as well as in the achievement of the goals of the National Nano-technology Strategy which was launched by the Department of Science and Technology (DST) in 2005. The strategy aims to coordinate nano research and development at a national level around six focus areas: water, energy, health, chemical and bio-processing, mining and minerals together with advanced materials and manufacturing.



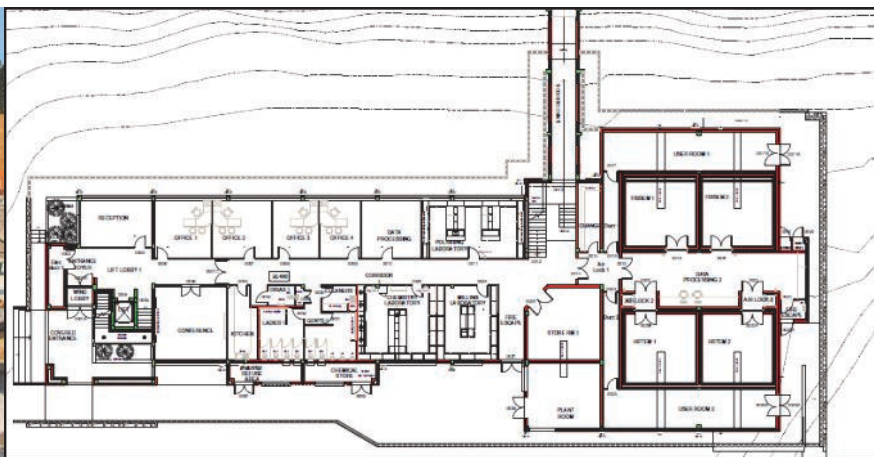
Cutting of the ribbon, the honourable Minister of Higher Education and Training, Dr Blade Nzimande with Ms Santie Botha (Chancellor, NMMU), Dr Albert van Jaarsveld (NRF President & CEO), Prof Derrick Swartz (Vice-Chancellor, NMMU), and Prof Jan Neethling (Director of the Centre for HRTEM).



Guests at the Conference Centre on the North Campus of NMMU viewing the video feed of the opening of the CHRTEM on the South Campus.

The new JEM-ARM 200F is the only of its kind on the African continent

The new JEM-ARM 200F is the only double aberration corrected atomic resolution transmission electron microscope (ARTEM) on the African continent (and one of approximately fifty of its kind worldwide) has a resolution of 0.08 nm in STEM - and 0.11 nm in TEM mode (0.1nm) [which also is the approximate diameter of an atom].



Nanotechnology is all about building — some microscopists like Prof Mike Lee take it to a whole new level. The CHRTEM ground floor outlay above.

The Centre for HRTEM was thus established with the backing of the DST after the national Nanoscience community supported the establishment of this Centre at the NMMU due to its acknowledgement as a leader in the field of electron microscopy. The key objectives are to conduct the most advanced nanoscale materials research on the African continent, and will provide opportunity for multidisciplinary research covering aspects of nanophysics, nanochemistry, materials science and mechanical engineering. Highly skilled MSc and PhD graduates can now be trained by using an atomic resolution transmission electron microscope and related instruments.



The entrance to the Centre for HRTEM on the South Campus.

Further to this, the establishment of the CHRTEM also aims to transfer expert knowledge to industries in order to bridge the gap between research and product commercialization which will ultimately contribute to the international development and competitiveness of some of these South African companies.

South Africa has been in need of new equipment and infrastructure in order to keep abreast with advances in the fields of nanoscience and nanotechnology as well as the development of nanomaterials.



The CHRTEM building with an interlinking passage to the Department of Physics at NMMU. The isolated area () that houses all the state-of-the-art electron microscopes.*



Prof Japie Engelbrecht (HOD Physics) with Prof Koos Vermaak, Prof Jan Neethling, Dr Greg Olsen, Prof Hennie Snyman and Prof Mike Lee.

South Africa has been in need of new equipment and infrastructure for advances in nanotechnology and nanoscience

The three other state-of-the-art electron microscopes included in the Centre that will serve as feeder instruments in the preparation of samples are: a JSM-7001F SEM, Helios Nanolab 650 FIB SEM and a JEM-2100 TEM.

As microscopists, we know that environmental issues and range of parameters that affect the operation and ideal functioning of the ARTEM would become absolutely critical - any parameter which causes a deviation greater than the dimensions of an atom would be unacceptable. In order to limit mechanical vibration, the room that the ARM has been placed in consists of a large (100 metric tonnes) isolated block on a specially prepared graded substrate with a 100mm air cavity on all four sides. An inner protective wall surrounded by buffer rooms to minimize acoustic vibrations surrounds the ARTEM.



Construction of the four microscope rooms that are isolated from the main building.

Acoustic tiles on the wall and ceiling, together with the placement of all vacuum pumps, compressors and water chillers which are housed in the buffer rooms, all contribute to minimizing mechanical and noise vibrations.



All vacuum pumps, water chillers and compressors are housed in the buffer rooms. To minimize electrical and noise disturbances, all electrical wires are neatly tucked beneath the floor panels and acoustic tiles have been fitted against the walls.



The JSM-7001F equipped with WDS.

The main source of magnetic fields are electrical cabling and metal reinforcing in the room which could result in distortion of the image at high magnification. Absence of metal components in the roof, together with lightning towers at strategic positions around the perimeter of the building all aid in avoiding lightning conduction. Air flow and humidity are maintained within the 50% -60% ranges since there could be a risk of dew point condensation of moisture on the electronic components at higher humidity. Air pressure and environmental isolation is facilitated by means of two airlocks before entering the microscope room.

The funding of the establishment of this prestigious R120 million Centre for HRTEM in South Africa was provided by the Department of Science and Technology in partnership with the National Research Foundation of South Africa, the Department of Higher Education, NMMU, Sasol, the NMMU Trust and Dr Greg Olsen (USA).

This is an excellent facility and opportunity to address the training of highly skilled postgraduates to alleviate the severe shortage of electron microscopy skills in our country.

We congratulate Prof Neethling and the entire planning team on the great achievement in securing this high resolution facility for the research- and industry communities of South Africa and the African continent – a facility of national importance.

Ed.

EQUIPMENT NEWS

The Department of Science and Technology in partnership with the National Research Foundation of South Africa has through the Strategic Platforms Programme made available grant funding for state-of-the-art research infrastructure and equipment to support scientific development.



science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA



National
Research
Foundation

National Equipment Database

<http://eqdb.nrf.ac.za>

The National Equipment Database, launched in October 2010, is a joint initiative between the Department of Science and Technology (DST) and the National Research Foundation (NRF) and it aims to play a critical role in:

*Informing continued investment in research equipment and platforms;
Advising researchers of what equipment is available nationally;
Facilitating access to multi-user equipment; and
Stimulating new applications for research infrastructure.*

The database houses all relevant information pertaining to state-of-the-art equipment acquired through DST and/or NRF funding as well as other public sector investment in specialised, multi-user research equipment.

This user-friendly and searchable database is a live tool and will be updated on a continuous basis by the Strategic Platforms Programme (SPP) at the NRF.

The following state-of-the-art equipment has been launched in 2011:

Zeiss LSM 780 Confocal Microscope (WITS)

The confocal microscope awarded to Professor Kramer, under the NRF-DST National Equipment Programme, was launched on 12 May 2011 at the University of the Witwatersrand. This microscope has high resolution and high magnification for cellular imaging in different z-planes as well as cellular tracking and staging functions in real-time and can be used for live cell imaging.



Micro-focus X-ray system (NECSA)

On 1 July 2011, the South African Nuclear Energy Corporation (NECSA) launched the micro-focus x-ray radiography/tomography system funded under the NRF-DST National Equipment Programme. The system is a turnkey X-ray computer assisted tomography (CAT) scanner system for the non-destructive micron range resolution generation of 2D transmission images and 3D reconstructed tomography images of small size samples with micro-range features/defects.

For the first time researchers in South Africa will have the opportunity to use state-of-the-art micro-analytical equipment for X-ray radiography and tomography imaging for a large range of novel applications that include important study fields in the energy sector such as micro-tomographic studies of coal morphology to improve energy efficiency, detailed fuel cell related studies and determination of

micro-structural integrity of high temperature nuclear fuel particles and related materials.

The Micro-focus equipment will provide vital niche information as part of a host of available non-destructive radiation diagnostics available at NECSA and elsewhere in the country. As the nuclear industry requires considerable expansion of facilities and knowledge, this equipment will also play an important role in human capacity development in applied radiation sciences.

Standard based substation automation and energy management system (CPUT)

On 27 September 2011, the Director General of the Department of Science and Technology, Dr P.M. Mjwara, opened the Centre for Substation Automation and Energy Management Systems (CSAEMS) at the Cape Peninsula University of Technology (CPUT).

South African utilities, transmission and distribution specialists are committing themselves to the international trend toward power system integrated automation and control, but the challenge is that the current industrial and educational pool of expertise nationally is not adequate to that required for rapid penetration, uptake, and research into the new technologies (i.e. limited scarce-skills human resources in terms of university graduate outputs, and numbers of relevantly skilled personnel residing within vendor companies, consultancies, and research and design departments).

It is envisaged that contributions from the system would occur through substation automation derived research-outputs being integrated into the academic programmes by means of the following:

- Creation and development of academic programs and coursework to adequately integrate knowledge from fields as diverse as power system protection, data networking, software and embedded systems development
- Incorporating current research and experimentation work with respect to IEC61850 applications into future course curriculum of undergraduate programs.

Centre for High Resolution Electron Microscopy (NMMU)

The Centre for High Resolution Electron Microscopy was launched on 11 October 2011 at the Nelson Mandela Metropolitan University and houses the following instruments:

A JEOL ARM200F double Cs-corrected High Resolution Transmission Electron Microscope with energy dispersive X-ray spectrometry (EDS) and electron energy loss spectroscopy (EELS) detectors;

A JEOL 2100 LaB6 feeder TEM with EDS and EELS;

A JEOL 7100F Scanning Electron Microscope (SEM) with EDS, wavelength dispersive X-ray (WDS) and electron back scatter (EBSD) detectors;

A FEI Helios Focused Ion Beam SEM; and sample preparation equipment:

Five Gatan PIPS ion mills
(cold stage and low voltage)

Two diamond wire saws

Six grinder/ polishers

JEOL cross polisher

Seven optical microscopes

Atomic Force Microscope

Nano-indentation hardness tester

- Establishment and resourcing of modern laboratories with equipment compliant with the new technologies.
- Provision of training, workshops, seminars and other supportive forums for personnel from industry working with such systems.

The establishment of the CSAEMS has arisen under the leadership of Prof. Raynitchka Tzoneva - with support from eminent researcher and contributor to the IEC 61850 standard - Adj. Prof. Alexander Apostolov; departmental colleagues Adj. Prof. Petyu Petev, Mr. Shaheen Behardien and Mr. Carl Kriger; and Industrial Partner Mr. A. Dierks of Alectrix (Pty) Ltd.

State-of-the-art Equipment

The Centre for HRTEM will be an infrastructure intensive centre, which aims to concentrate existing capacity in terms of high-end research infrastructure and skills as well as resources to enable researchers to collaborate across disciplines on long-term projects that are locally relevant and internationally competitive in order to enhance the pursuit of research excellence and capacity development.

As a specialised multi-user facility, the Centre will train students from all public research institutions as well as private companies. Postdoctoral researchers will be encouraged and supported to enhance research programmes and postgraduate training.

**Search the Equipment Database for other equipment
available nationally to be utilized in your field or discipline**

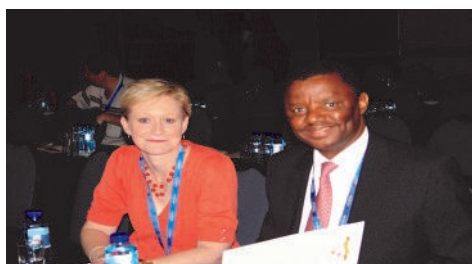
<http://eqdb.nrf.ac.za>

Highlights of MSSA 2010

It sounds like such a cliché, but the year has absolutely flown past, and already it is almost time for MSSA 2011. Please allow me to reminisce just a little about our previous annual meeting hosted by the University of Limpopo from **26-29 October 2010** at Forever Resorts Warmbaths, Bela-Bela, Limpopo Province.

The Technical Forum was co-ordinated by Prof Mike Lee, with many exciting developments and applications for new instrumentation being presented through-out the day. This was the second year that the Technical Forum was presented as a stand-alone day before the start of the scientific conference, and once again was a most successful event. The official opening of the Exhibition took place on Tuesday evening with great thanks to our sponsors Gatan, and Oxford Instruments, UK.

MSSA 2010 was officially opened by the Vice-Chancellor and Principal of the University of Limpopo, Prof NM Mokgalong on Wednesday where after Prof Jan Neethling (President MSSA, 2010) welcomed all our delegates.



Dr C Baker (Convener, MSSA 2010) and Prof NM Mokgalong (Vice-Chancellor, UL)

Prof Peter van Aken from the Max Planck Institute for Metals Research in Stuttgart, Germany was our invited international guest and presented the 31st John Matthews Memorial lecture in material sciences.

Wednesday was filled with many interesting and exciting presentations, and our delegates were then treated to a 'Braai evening' at the Boma where all were welcomed by fantastic beats of the local Marimba band on arrival - our thanks to Advanced Laboratory Solutions for sponsorship of this event.

Even though festivities continued well into the night, the delegates were ready for their presentations on Thursday. Prof Trevor Sewell from UCT was invited to present the Boris Balinsky Lecture in the life sciences. The student evening hosted by the University of Limpopo was held at the Spa on Thursday... a pool party enjoyed by all!

Carl Zeiss SA sponsored the Gala and Awards Dinner that took place on Friday evening- a huge success with the *Vega Duo* from Starsong Productions that provided live entertainment during the course of the dinner. Our award winners are listed on the next page.

On behalf of MSSA 2010, I would like to also thank all our other sponsors for the wonderful prizes they make available to our presenters in various categories. Apollo Scientific sponsored our great laptop bags.

There was sufficient scientific interaction...but always time for a little relaxation in between too. Many wonderful activities that Forever Resorts had to offer, such as hiking, swimming, the mineral baths at the Spa, and of course... cable skiing was enjoyed! All around I hope that everyone had a great MSSA 2010 conference at Forever Resorts! Ed.



**Thanks to
all our
sponsors**



Award Winners: MSSA 2010

ALS/JEOL AWARD for the Most Upcoming Microscopist. The winner of this award (amounting to an estimated R25,000) is sponsored to travel abroad and present a paper / poster at an international Conference.....

ANASPEC/ CARL ZEISS PRIZE of R1,000 for the paper or poster that uses microscopy to address an industry-related problem.....

FEI PRIZE for each of the best papers published in a recognised international Journal for Physical Sciences or Life Sciences during the period July 2009 to June 2010.....

FIONA GRAHAM PRIZE of R1,500 is awarded to students who submit a 'first-time-accepted-no changes-required' abstract for the conference.....

MARY VEENSTRA PRIZE of R500 will be awarded for the best poster presentation on any form of microscopy presented at the conference.....

SMM TECHNOLOGIES AWARD of R1,000 for the best paper or poster using confocal microscopy.

SMM TECHNOLOGIES prize of R1,000 for the most innovative technique in microscopy, and/or on the novel use in SA of an established technique.....

WIRSAM LIGHT MICROSCOPY PRIZE of an Olympus camera for the best light microscopy oral or poster presentation.....

WIRSAM SCIENTIFIC awards a prize of R850 for the best paper presented by a student author.....

WIRSAM TESCAN PRIZE for R1,000 for the most exceptional presentation at the conference.....

CARL ZEISS prize for the best low voltage scanning electron micrograph.....

Ettienne Minnaar (NMMU)

Dr Jacques Olivier (NMMU)

Physical Sciences:

Prof L Cornish et al. (WITS)

Life Sciences: J du G Harrison

Dr Sarah George (UCT)

Clive Oliphant (Mintek)

Britta Kleeman (UCT)

Prof R van Fleet (UCT)

Dr Martina Crole (UP)

H Badenhorst

Dr Ben Loos (US)

Andre Botha (UP)



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JEOL InTouchScope SEM
at MSSA
6th to 9th December 2011*



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ALS ADVANCED LABORATORY
SOLUTIONS

MSSA TRUST

These awards are only open to persons holding South African citizenship or permanent residence

MSSA Trust Bursary

The value of the student bursary for one year will be **R15,000** by competition.

The project involved must contain a **significant** microscopy component.

Please note: Applications not containing all the required information will not be considered. The Trust will not enter into any form of correspondence regarding the final award of the bursary.

General funding

The **Microscopy Society of Southern Africa (MSSA) Trust** wishes to promote microscopy in Southern Africa and improve the microscopy skills of its people. As such, applications for funding in the following areas are invited:

- 1) promoting microscopy and science careers in southern Africa,
- 2) towards the organization of microscopy based workshops or schools in Southern Africa,
- 3) promoting microscopy to learners in schools,
- 4) attendance at microscopy conferences or workshops*.

Application forms and details are obtainable from the Secretary of the Trust, Alan Hall.

These must be submitted by **e-mail only** to alan.hall@up.ac.za. Telephone: (012) 420 2075.

Applications must contain all information considered relevant including:

- 1) letter of support from the head of department or supervisor,
- 2) CV of the person or persons involved,
- 3) details of the conference, workshop, event or project planned,
- 4) specific benefits to be obtained by the person(s),
- 5) say will give lecture(s) /seminar(s), hold a workshop, write article(s) on return,
- 6) detailed budget,
- 7) global budget figure as a separate document,
- 8) details of applications made or to be made to other funding sources and their response etc.

DEADLINE for all applications is Wednesday 16 November 2011

***PLEASE NOTE:** The MSSA Trust is registered as a Public Benefit Organisation (PBO), unlike MSSA itself. While we have not yet received from SARS the rules under which we must operate, it is possible that at some point we may not be able to fund travel or accommodation expenses. The Trust must thus be cautious. Please submit two versions of the budget part of the application: one quoting an overall figure, the other a detailed breakdown of the costing. In addition, it is important for the applicant to say in the application that they would give their gained knowledge to others on your return eg. give a lecture/ seminar(s), hold a workshop, write articles based on what learned etc. No proof of this will be required by the Trust.

Depending on the size of the application, it is normally expected that the Trust will only partially fund the total budget. Hopefully all applicants will be notified by December 2011 of the decision of the Trust. Successful applicants will be required to provide proof of attendance at the funded event or audited accounts when organizing events etc., write a detailed article on their attendance or event for the MSSA Newsletter. A presentation on what was learned/ gained is expected at the scientific sessions or Technical Forum of the following MSSA conference.

Mike Witcomb
Chairperson, MSSA Trust

10 October 2011



Take time to view this site

<http://www.microscopy.info/>



Focus on a Lab



Centre for Microscopy & Microanalysis (University of Pretoria)

As is the case at many academic institutions, the Laboratory for Microscopy and Microanalysis had its origins in the centralization of electron microscopes and ancillary equipment that were operated in academic departments. At the University of Pretoria this took place in 1983 with Prof Jan Coetzee (head), André Botha and Chris van der Merwe as staff. Administratively the Unit for Electron Microscopy as it was then known fell under the Faculty of Science.

An interesting story around the acquisition of the first electron microscope at UP is often told: the UP administrators, doing what all university administrators usually do, turned down the request from a certain individual for funding to buy an electron microscope. Being what all microscopists usually are (resourceful), the microscope parts were ordered as single items over a number of months, eventually resulting in a complete electron microscope! Rumor has it that the individual was summoned to appear before the University Board to explain why they (the Board) had to learn about this microscope that was acquired by "their" University, in the daily press.

The service grew steadily and by 1998 it was no longer limited to electron microscopy. It was then decided to change the name to the Laboratory for Microscopy and Microanalysis.

In 1994 Alan Hall joined the staff from one of the departmental EM facilities and later in the same year Elfrieda Meyburgh was appointed as secretary/administrator. Members of the Society will remember Elfrieda for the excellent administrative service that she gives to the MSSA.

With the retirement of Jan Coetzee, Prof Johan Malherbe took over as head of the Laboratory. In 2008 Helena Steyn joined the staff and after her transfer within UP, she was succeeded by Antoinette Buys in 2011. Another UP in-house transfer saw Elfrieda succeeded by Irene Makhanya in 2009 as secretary/administrator.

The Laboratory provides in the demand for all microscopy- and related services at UP and to a limited extent from industry and parastatal institutions. It also fulfills its community duties by entertaining visits from schools and supporting learners with their Expo projects.

Four scanning electron microscopes, each equipped with various specialized technologies are operated in the Laboratory. After a week-end fire (NOT for a braai!), the trusty 30 year-old transmission electron microscope was replaced in 2008 with a 200kV field emission gun TEM. That year also saw the acquisition of a high-pressure freeze-fixers and ancillary equipment and also a field-emission SEM. A confocal laser scanning microscope was added to the facilities to fulfill the growing demand for specialized fluorescence microscopy on the campus. At the end of 2010 an advanced atomic force microscope system and a motorized, high-end stereo microscope was installed.

The Laboratory is looking forward to an exciting future in the ever-dynamic field of microscopy and will strive to render the best possible service to its users.

Alan Hall



Job opportunity at University of Kuwait

The Faculty of Science at Kuwait University is seeking to appoint a Chief Technician for the Nanoscopy Science Center (nsc). The applicant should hold an academic qualification of a good first degree in Biological Sciences or related subject (material sciences) preferably with a master or doctorate degree with 10 to 12 years of proven experience in the field of advanced imaging, nanoscopy and electron microscopy in a well reputed research and educational institution to serve undergraduate, Masters, Ph.D. students and researchers from both biological sciences and material sciences. Various microscopes are housed in the Centre and includes an HRTEM with EDS, TEM, VP FE-SEM with EDS and cryo-attachment, SEM, AFM and Confocal laser scanning microscope.

**For further information, please visit the website: <http://www.nsc.kuniv.edu>
Or call: +965 2 498 7844.**



MSSA 2011



Microscopy Society of Southern Africa Annual Conference, MSSA2011



science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

On behalf of the
Microscopy Society of Southern Africa and the
Conference Organisers,
we have the pleasure of inviting you to attend the
49th Annual Conference of MSSA
which is hosted by the
CSIR/DST National Centre for Nanostructured Materials,
at the
CSIR International Convention Centre in Pretoria.

We sincerely hope you will be able to attend.

DATES:

MSSA Technical Forum 6 December 2011
MSSA 2011 Conference 7-9 December 2011

Conference Convener:
Professor Suprakas Sinha Ray
rsuprakas@csir.co.za
Tel: +27 (0)12 841 3702

Conference Secretariat:
Miss Margaret Ward
mward@csir.co.za
Tel: +27 (0)12 841 3643

**Visit our Conference website
for information:
www.mssa2011.co.za**

Upcoming Events

2011

December 5-9

Microscopy Society of Southern Africa MSSA 2010
CSIR Conference Centre, Pretoria
<http://www.mssa2011.co.za>

2012

June 10-14

CIMTEC 2012 – 4th International Conference
on Smart Materials, Structures and Systems,
Montecatini Terme, Italy

July 29-August 2

Microscopy & Microanalysis 2012
Phoenix, AZ USA

September 16-21

European Microscopy Congress Emc 2012
Manchester, UK

2013

August 4-8

Microscopy & Microanalysis 2013
Indianapolis, IN USA



JOIN THE MICROSCOPY SOCIETY OF SOUTHERN AFRICA

The Society is open to professional scientists, technicians and technologists, as well as students and members of the trade [microscopy and associated equipment]. Information and application forms are available from
<http://www.microscopy.org.za/membership.htm>

Membership entitles you to:

A reduced fee for conference registration
Receipt of the MSSA Newsletter during the year
Access to discussion groups (MSSA List server) and regional meetings

Your status with the society can be confirmed, or checked, by contacting Mr Alan Hall E-mail: alan.hall@up.ac.za

Membership Fee:

Ordinary membership.....	R 70.00 p.a.
Student membership.....	R 35.00
Institutional membership.....	R280.00

An entry fee of R30.00 is payable by Ordinary and Institutional members

Thanks to ALS & JEOL

Good day Mr Perrett,

I would like to thank the Advanced Laboratory Solutions (ALS) and JEOL for granting me the opportunity to attend the EMAG 2011 conference. It was an experience of a lifetime and one that I will never forget. I feel greatly honoured to have been chosen as the recipient of this award. The advanced school and conference that I attended was of a very high standard and I truly earned a lot from all of the presentations and practical demonstrations. The conference seminars were of great interest to me and I felt privileged to be lectured by individuals of such high intellect. The exhibition I attended was a real eye-opener; the technology of today is astounding. I left the conference with new found vigor and interest in microscopy after realising what all of the microscopes of today are capable of. The HRTEM Centre and installation of the microscope is almost complete here at NMMU so I am very excited to apply the different techniques that I learned at EMAG on our microscopes.

Visiting the UK was always a dream of mine. The sightseeing that I did in Birmingham and Oxford will be with me forever. England truly is a beautiful land.

I would also like to thank everyone from the Materials department at the University of Oxford for the hospitality and warmth that I received during my visit. It was a great honour for me to present my work at the department. This experience is one that I never would have dreamt of, I cannot thank everybody enough. The only way I can repay everyone is by continuing with my studies and making new discoveries.



Ettienne Minnaar seated here with Dr Larry Stoter from JEOL, UK at the EMAG 2011 conference.

I have made friends and met people from different universities all over the world. What I realised during my visit to EMAG and Oxford University is that no matter what our background, race, nationality or age, as scientists we are all united by one goal and that is to make new discoveries.

Once again thank you.

Regards,

Ettienne Minnaar



Carl Zeiss starts Apprentice Training Project

Over all the years of interviewing and taking on new engineers, I have wanted to give so many youngsters the chance to better themselves by providing them with some practical experience that will enable them to start off their careers. Not only that, but in many cases you interview a person and then much later find that being a field service technician is not exactly what they wanted to do. Then the most frustrating is that you employ youngsters who have completed all the theory, with great success, but their practical experience is really poor and you

It's a good thing to give something back to skills development in South Africa

find you are teaching the basics of electronics for the first year of their career as a fully qualified engineer.

Now that I am at Carl Zeiss, we have started with an apprentice training project. Every 6 months we take on up to 3 students in need of practical experience in order to obtain their diplomas and then let them go into the big wide world to make their own future. So this is not an advert for how great Carl Zeiss is, but



rather some advice to others who may be in the same position, always looking for new staff but unsure to invest heavily in them before they have proven themselves. We also have a few very experienced engineers working here and feel it's a good thing to give something back to skills development in South Africa.

There are so many youngsters completing their theory at the Universities of Technology with the belief that they will go into industry to design and build new technology because they have completed a diploma.

What we therefore offer these students is a 6-month field service training employment contract. We have contact with a University of Technology and are taking on students who may not have a permanent job after their theory training. We don't have a formal training schedule as that is impossible in a field service company. *Continued on Page 13*

Trainees get to visit clients with our team

The trainees get to visit clients with our team and learn that paperwork is an important part of the job. Complete service reports, update helpdesks, inform Admin where they are and the like, and all training courses that we offer locally, they also get to attend.

From a company point of view, we get to see how they work and can assess their performance. In the event that we need a set of extra hands, we have someone- and if we should need an extra engineer as the work load increases we have someone who knows our business. Further to this, our own engineers also get the experience of now constantly having to train new engineers, and as we all know, it's only when you have to explain what you are doing, that you really learn what it is that you do well!

On a monthly basis the students hand in a report on what they did and learned in that month which is then handed in as part of their practical experience to attain their diploma. As we will be unable to offer all these technicians permanent positions, we will let other interested companies know who may be available to pursue a career in our industry.

Luc Harmsen



Carl Zeiss Launches Life Science Website for Electron Microscopy

Clearly structured presentation of application solutions and technologies

We are pleased to announce, that Carl Zeiss has launched a new Internet website that highlights the potential of electron microscopy for biomedical research.

Divided up into six main areas of research, the portal examines the different demands made by science on electron microscopy and illustrates technological solutions using sample applications. Fascinating application images and an extensive collection of application reports provide impressive insights into what has already been achieved. The segments range from biomedical engineering, structural- and cell- biology and microbiology to neurosciences and zoology/plant science. Each segment demonstrates the application potential of suitable electron microscopes, substantiated by application images and videos provided by clients.

The goal of our new website is not only to provide information on the possibilities offered by the different technologies, but also to initiate dialog that will make it easier to identify future requirements at an early stage and develop the appropriate solutions to address these challenges.

To enter the new Life Sciences website, click on the following link:

<http://www.zeiss.com/lifesciences>.

EVO® HD - High Definition Electron Microscopy

Continuous improvement is central to the Carl Zeiss philosophy. The development of the EVO® HD represents not only an improvement but a true step-change in conventional SEM performance.

The new EVO® HD from Carl Zeiss Nano Technology Systems now brings High Definition to electron microscopy. Featuring a new electron source technology, the EVO® HD delivers dramatically increased brightness - resulting in a groundbreaking increase in resolution at low acceleration voltages. In addition analytical applications benefit from a 30% improvement in resolution at analytical working conditions.

Would you like to find out more?

Just click on this <http://www.smt.zeiss.com/evohdenewsint> see impressive images and learn more about the technological improvements of EVO® HD.



We make it visible.



EVO® HD 15



Butterfly wing