

Summer 2014/15

Moving Ahead with Microalgae to Energy



Prof Ben Zeelie (right) demonstrating the algae-coal binding process in the InnoVenton Greenhouse to (from left) Prof Derrick Swartz (VC), Ms Khungeka Njobe (Chairperson of TIA board), Prof Thoko Mayekiso (former DVC: Research & Engagement), Somila Xosa (DST) and Tsakani Mthombeni (TIA).

Innovative algae technology that could turn millions of tons of waste coal dust into high quality clean coal has been developed by the NMMU's Institute of Chemical Technology, InnoVenton, over the past few years. Supported by the Department of Science and Technology's Biofuels Demonstration Programme and the Technology Innovation Agency, this project has huge potential for the production of export quality coal as well as biofuel products.

"If you mix coal dust and algae biomass, the algae collects onto the surface of the coal and binds the dust together," said InnoVenton's Prof Ben Zeelie. The result is a coal-algae composite, Coalgae®. Coalgae® may be used as a substitute for coal in various processes, or may be further processed to a bio-fossil crude oil blend and synthetic gas. These may be converted into a variety of fuels, including gasoline, diesel, kerosene, aviation fuel, and heavy fuel oil.

"The ability to combine the two feedstocks (coal fines and algae) means that only one process is necessary, instead of two."
- Prof Ben Zeelie

Carbon sequestration, the upgrading of low quality coal and the production of clean water are among the spin-off advantages of the production of Coalgae®.

Consulting engineering firm Hatch-Goba recently completed a basic engineering study on the technology for the production of Coalgae® at a 1 hectare scale. While this is not an economically viable scale, it will enable demonstration of the technology to interested companies and investors.

The project was publicly demonstrated for the first time in January 2014. Aspects of Coalgae® technology demonstrated included the cultivation of microalgae in the photo-bioreactor system developed by NMMU, the use of coal-generated flue gas to meet the microal-

gae's need for carbon dioxide, the harvesting of the microalgae and the production of the coal-microalgae composites.

In February 2015, the technology won the award for the 'innovation most likely to impact public procurement' at the Innovation Bridge Technology Matchmaking event held in Pretoria.

The Department of Innovation Support and Technology Transfer has worked with InnoVenton every step of this project.

There are five separate patent applications associated with the technology. Commercialisation discussions are underway with various partners and a business plan has been developed.

Note from the Director

We've had a busy year and we hope you enjoy reading about some of our achievements of the past year and the exciting events planned for next year.



Our projects are moving ahead towards commercialization and we are involved in a range of exciting initiatives with researchers and students. One of the most exciting initiatives is the launch of Propella, the NMMU's incubator. It seems amazing that it is finally here after so many years of planning!

My thanks go to my fantastic team as well as to the NMMU's researchers and students, without whom we would have nothing to report. Here's to growing innovation at the NMMU!

Jaci

Projects across the research

Every year the Department of Innovation Support and Technology Transfer gets involved in new and continuing projects at various stages of the research and innovation chain from applied research to late stage development and early stage commercialisation. We are amazed by the ingenuity and inventiveness of our staff and students. We are also overwhelmed by their persistence in the face of challenges that are present throughout the innovation and development chain. These are just a few of our projects - watch this space for updates in future issues...

Consumer product safety

Cosmetic and health care products contain plasticisers: compounds responsible for ensuring that substances maintain a certain viscosity. There are safety concerns with synthetic compounds that are currently used as plasticisers.

A project led by Prof Paul Watts and Prof Ben Zeelie of InnoVenton and the Department of Chemistry, is using known processes to synthesise plasticisers using natural products as a starting material. The plasticisers stem from compounds found naturally in the Citronella plant. This project is at an early stage but could be a major step up for safety in consumer products.

A low cost solution for warehouse intra-logistics



Prof Igor Goriach and Mr Andrew Norman of the Department of Mechatronics have developed a low-cost Automated Guided Vehicle (AGV), called Badger™. They are refining the prototype and implementation of the AGV in a working warehouse. Aimed at improving efficiencies and reducing costs of transporting material in manufacturing and warehousing facilities, the Badger™ is

becoming a viable automation solution, attracting interest from major automotive manufacturers.

Improving the healthcare experience of disabled people



Patients who have reduced or no hand/arm function are unable to use the existing help-call buttons to get the attention of healthcare staff in hospitals, rehabilitation centres and frail care centres. A simple press device, Qbell™, was developed by Heinrich Williams with a team of engineers from eNtsa.

*“Being disabled is not the end of the world, but the start of a new challenge.”
- Heinrich Williams, Inventor of Qbell™*

The device can be operated by palm, chin, foot or another part of the body. The Qbell™ has been tested at Aurora hospital and has shown that it has the potential to positively improve the healthcare experience of people with severe motor and physical disabilities. Ten Qbell™'s have been manufactured for demonstration and testing in other healthcare settings.

Better fitting contact lenses



Munir Kadernani (MEng Mechatronics); **Prof Khaled Abou-El-Hossein** (Professor in Mechatronics); **Oluwole Olufayo** (PhD Mechatronics).

Major contact lens manufacturers generally only cater for the corneal profiles

of Caucasian users. However, the use of contact lenses by African, Indian and other ethnic groups can cause eye irritation and lead to optic ulcers or other complications due to flatter corneal profiles.

A project led by Prof Khaled Abou-El-Hossein from the Department of Mechatronics in partnership with Ms Vanessa Moodley (University of KwaZulu-Natal), is focusing on improving manufacturing capability for soft contact lenses suitable for non-Caucasian users.

This project could be a major boost for a local lens industry as well as changing the lives of people wearing poor fitting lenses.

Decreasing ostrich mortality



Ostrich chicks are highly vulnerable to infections and worm infestations before the age of four months. As a result the mortality rate is as high as 60% during this period.

This project brings together three products developed to reduce mortality in the ostrich industry: a deworming product developed and patented by George Campus' Stefan Hattingh, a probiotic developed by the University of Cape Town and a natural antibiotic developed by Beonics (Pty) Ltd.

Led by Dr Ernst Thompson, the research includes feed trials in ostrich chicks to prove the efficacy of the products separately and in combination.

Successful trials could lead to development of a new feed supplement. It could also significantly improve the chances of the South African ostrich industry recovering from losses sustained in recent years.

and innovation value chain

Theft-proof electricity

Energy production in rural areas where there is no electricity grid is challenging. This is particularly a problem in areas that are inaccessible by road and in areas with a high incidence of theft. Existing solutions for small-scale energy production include the use of solar panels, generators and fuel – all valuable items that are subject to theft. Prof Russell Philips and Jason Humm of the Department of Mechanical Engineering have developed Hot Rock™, a low-risk and cost-effective system for generation and storage of energy at small scale (1-5kW).

Thermal energy harvested during the day is stored in a rock bed and can be used at night after conversion into electricity using a Stirling heat engine. The Hot Rock™ system has eliminated the need for valuable components such as generators, diesel and batteries thus making it less attractive to would-be thieves. A viable domestic sized Hot Rock™ prototype that successfully converts solar heat into electricity has been constructed and research on the system is ongoing.

Changing rubber manufacturing

Rubber Nano Products (Pty) Ltd owns Intellectual Property developed during Robert Bosch's PhD study in Chemistry. The NMMU is still involved in assisting this company that sells an environmentally-friendly activator for rubber production that provides a number of advantages such as cost and time saving. RNP managed to attract significant technical funding from the Technology Innovation Agency in 2014 to continue research and development. The funding is being used to modify the product for use in tyre production and work is being done with manufacturers in Asia and Europe. A product is also being developed that can be used in latex, which will provide a significant market for RNP.

The company is setting up a small manufacturing facility due to the challenges of producing small quantities at a toll manufacturer. Existing agreements in

Europe and Asia are being strengthened and the product is likely to be produced in Europe in 2015.

Warehouse sorting and retrieval system



The TetraStack™ team of Mechatronics students – Christopher Sephton, Adriane Bestic, Shuldhham Peard and Ashley Naude.

TetraStack™ is an Ultra High Throughput Warehouse Defragmentation System. Inspired by the game "Tetris", the system design allows the positioning, locating and retrieval of packages in a racking matrix using the least amount of energy and space within three dimensions. The TetraStack™ system can minimise the time span between order placement and delivery in warehouses and storage areas. The system and its components have been provisionally patented by the NMMU.

The TetraStack™ team took 2nd place in the PneuDrive Challenge held in Cape Town in October 2014. The team was also awarded the Innovation prize. Themed "Green Warehousing Logistics", the PneuDrive Challenge called on students to design an energy efficient solution for a specific operational problem in warehousing. The project is continuing this year and hopes to develop a working prototype.

Welding technology taking flight

The NMMU's eNtsa has been working closely with the Department of Innovation Support & Technology Transfer to commercialise their novel welding solutions. Based on technology first developed for Eskom, eNtsa is being approached by a number of commercial companies who require the same solution. A spin off company called Mantacor has been started to commercialise the technology by providing a service to

companies requiring non-destructive sampling to determine the remaining lifespan of plant infrastructure subject to stress.

The Weldcore® process being commercialised by Mantacor allows the in situ removal of a representative cylindrical metallurgical sample from a pipe or component, and the subsequent repair of the removal site using a solid state welding technique. The metallurgical sample can be analysed to ascertain damage to, and thus remaining lifetime of, the pipe or component. The Weldcore® process has been successfully applied to pressurised steam piping at a number of power stations and in a petrochemical plant.

Discussions with a venture capital fund are at an advanced stage. The funding will allow Mantacor to launch in the US and European markets.

Off-grid street lighting



Harvesting energy produced by wind and the sun, the Twerly® is a renewable energy street light being commercialised by entrepreneur Nikolas Jankovich. Jankovich said he was thrilled to work with the inventor, Russell Phillips, from the School of Engineering, as well as a team of engineers from eNtsa to develop a commercial prototype.

"Without these amazing minds and their commitment and willingness the Twerly® street light would have remained a concept."
- Nikolas Jankovich, Entrepreneur

The East London Industrial Development Zone ordered two Twerly® prototypes for the parking lot of their Science and Technology Park. Jankovich has orders for more products in 2015 and has signed a license with the NMMU to ensure Twerly® success.

Partnering on local

The Department gets involved in a number of innovative initiatives during each year. From assisting with finding research funding to championing the Regional Innovation Forum to driving the establishment of an incubator... We are very busy making sure innovation remains in the limelight at the NMMU.

Propelling technologies forward

Entrepreneurially-minded students, staff and Port Elizabethans will soon have support for the development of their businesses: the NMMU is launching a business incubator and accelerator in the second quarter of 2015. Propella will assist small business to start, develop and grow. University-based incubators provide a unique opportunity for emerging entrepreneurs to benefit from the talent and resources at a university. They also provide a benefit to the university as they provide training opportunities for students and commercial outlets for research. The stimulation of enterprise development also provides economic benefits for the region.

The launch of Propella is the culmination of a process stretching back to 2009 when the Finnish-funded COFISA programme (Cooperation Framework on Innovation Systems between Finland and South Africa) proposed that science parks can stimulate economic development. During an extensive feasibility and business planning process it was found that science parks often turn into real estate developments (the TechnoPark in Stellenbosch is an example) if there was no "pre-Science Park" phase to create a critical mass of innovative enterprises. It was thus decided to initiate the Science Park development with a business incubator and accelerator as the foundation for the development of a Science Park.

Propella will support, develop and grow new innovation-based enterprises in the local economy. Propella will operate as both a physical incubator and a virtual incubator and, while a key focus will be the commercialisation of NMMU technologies, Propella will also support locally-developed innovation-based enterprises that can take advantage of the networks at the NMMU. It should be

noted that innovation is meant in the broadest possible way - there needs to be an aspect of "newness" to the supported businesses but without a narrow focus on technology or intellectual property.

Propella will have a technology-based focus in renewable energy and advanced manufacturing but will not operate exclusively in either those areas or only support technology-based business. Non-technology-based industries have a significant role to play in the development of the local economy. The definition of focus areas will enable Propella to offer more customised services and achieve a stronger market position and branding, but a broader scope will ensure that potentially successful businesses will be supported which may have synergy with businesses in the focus areas.

Propella has sourced funds from the IDC and the NMMU, as well as private sector companies. It will be located in the old Gijima building behind South End museum, with a satellite Arts and Design Incubator at Bird Street campus. Propella will also provide virtual incubation services as some business may operate from Summerstrand campus or from other industrial areas.

Incubator services and programs will be provided to incubatees. These will increase a company's likelihood of successful development and growth beyond what they could achieve on its own. The services provided include direct technology and business development assistance; network and relationship support; and facility-based services.

The first few incubatees are moving in during March 2015. Watch this space for more exciting news!

"Our department has been incubating small businesses informally for many years. The establishment of Propella is going to add impetus to these businesses and allow us to assist many more. The focus on manufacturing and renewable energy is important for the Nelson Mandela Bay region and draws on existing strengths."

- Jaci Barnett, CEO (Propella)

propella

INCUBATE + ACCELERATE + GRADUATE



Propella premises seen from Walmer Boulevard (next to the South End Museum).

innovation initiatives

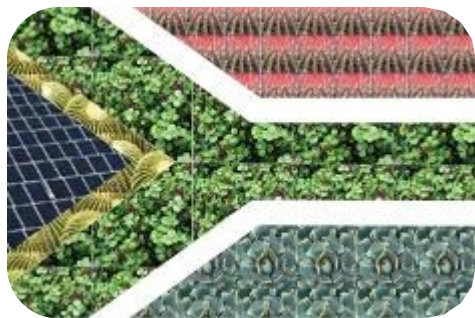
Waste into worth

A five-year research contract was signed with the Recycling & Economic Development Initiative of South Africa (REDISA) in 2014. REDISA is responsible for developing the mechanisms to ensure waste tyres are collected, managed and recycled.

The contract with the NMMU covers both research and innovation projects as well as the development and management of the first independent Tyre Testing Centre in South Africa. It is envisaged that many of the projects will lead to the creation of small businesses by developing new products from waste tyres. The Tyre Testing Centre will initially provide a method of assessing the “environmental rating” of tyres, but eventually it will become part of a larger “Product Testing Institute” as the lessons learned in tyre recycling are applied to other waste streams.

The Department of Innovation Support and Technology Transfer is assisting the Faculty of Science in coordinating the project while a suitable Programme Manager is appointed.

A Giant Flag in the Karoo



Mary-Ann Chetty and Prof Ernest van Dyk of the Department of Physics attended the launch of the Giant Flag project in October 2014. This multi-dimensional project harnesses several streams of environmental, social and economic activity in the Karoo in a bid to break the cycle of unemployment and poverty. Comprising a conference and tourism precinct as well as a 4 megawatt solar panel field, the project takes its name from its most inspired element – a 66 hectare South African flag made up of 2.5 million coloured desert plants.

The NMMU has a formal relationship

with the Giant Flag Trust to support the project in the area of renewable energy.

The SKA and the NMMU



The NMMU’s Optical Fibre Unit successfully proposed the establishment of the NMMU-Meraka Centre for Broadband Communication to the CSIR. The NMMU has over ten years’ experience as the leading optical fibre telecommunication research unit in South Africa and has a number of long running existing projects including these with MeerKAT and the SKA.

The proposal for the Centre was strengthened by CISCO’s commitment to providing equipment and support to the NMMU. In addition, the inclusion of the NMMU as a consortium member on one of the SKA work packages highlighted our expertise in this area.

The Department of Innovation Support and Technology Transfer worked closely with Prof Tim Gibbon to submit the proposal and to ensure that the complex contracting process progressed. The centre is being launched in March 2015 by the Minister of Science and Technology.

Bringing industry and academia together



AIMday® is a platform to bring together industry representatives and researchers to discuss challenges for which solutions may be collaboratively developed.

The NMMU has licensed the AIMday®

concept from Uppsala University in Sweden. It has been very successful in Sweden in bringing industry and academia together.

AIMday® Advanced Manufacturing will be held on 24 March 2015 at the Nelson Mandela Metropolitan University. The discussion of each question, in a one-hour facilitated session, seeks to initiate industry-academic collaborations that may begin to develop solutions to local manufacturing challenges. This is the first AIMday® outside Europe and promises to be an exciting day.

Regional innovation championed by the NMMU

The Regional Innovation Forum (RIF), chaired by the NMMU, has partnered with various organisations to host an array of events featuring local, national and international experts.

Prof Frank Henning, from the Fraunhofer Institute in Germany, shared insights on composites, linked to the development of a composites cluster in Nelson Mandela Bay.

Prof Saras Sarasvathy, of the University of Virginia, shared her research into *effectuation* - the idea that the future is unpredictable yet controllable. Together with a panel of local entrepreneurs, Saras shared examples of co-creating the future to strengthen entrepreneurial ventures.

RIF organised a tour of the House Rhino at Crossways Farm Village, as the site visit associated with the conference. House Rhino is completely self-sufficient in terms of energy consumption and is a leading national example of the application of energy efficiency and renewable energy technologies.

RIF also hosted an NMMU showcase in April to introduce the research capabilities of the NMMU and the CSIR to industry.

The Department of Innovation Support and Technology Transfer is the main driver behind the RIF and believes it is assisting our region to start an ‘innovation conversation’. This will lead to economic development and new industries which are sorely needed.

Promoting technology transfer

The Department of Innovation Support and Technology Transfer is very involved in promoting technology transfer and building capacity regionally, nationally and internationally. We believe this is part of our mandate and the NMMU gets as much back from these activities as we put in - in terms of friendships, connections and access to global networks.

Teaching students about IP across the Eastern Cape



Von Seidels IP Attorney **Dr Sameshnee Pelly** delivered presentations throughout the Eastern Cape.

Three talks were hosted at universities in the Eastern Cape to increase understanding of Intellectual Property.

Dr Sameshnee Pelly of Von Seidels Patent Attorneys presented talks on the basics of Intellectual Property. Organised by the NMMU, Von Seidels gave their time for free to ensure that all students have an opportunity to learn about this valuable topic. The last talk, held at the NMMU, was attended by over 100 students and researchers.

Assisting Eastern Cape technology transfer



From Left: **Ms Tarisai Chikungwa-Everson** (UFH), **Ms Jaci Barnett**, **Ms Thumeka Mantolo** (Rhodes), **Ms Dirk Odendaal**, **Ms Vuyo Gongxoxo** (WSU), **Ms Mary-Ann Chetty**, **Ms Nomafu Sigodi** (WSU).

The NMMU was contracted in 2011 by the National Intellectual Property Management Office to facilitate the development of technology transfer capacity in the Eastern Cape province. The contract ended in 2014, and Mary-Ann Chetty had some success building technology transfer capacity at the other universities in the Eastern Cape. This included providing training to administrators in the Research Offices of each of the EC universities on the administration of intellectual property, the operations of a technology transfer office, project management of IP-related projects and commercialisation of such projects.

The NMMU's TIMS, a Technology Information Management System developed to track projects and IP, has been provided to the other universities. TIMS is a simple solution and meets the needs of South African institutions.

Developing IP awareness



Marta Catarino (Director: TecMinho - University of Minho), **'Nyalleng Pii** (Senior Program Officer: PCT International Cooperation Division - WIPO), **Mary-Ann Chetty** (IS&TT).

As part of the World Intellectual Property Organisation's (WIPO) outreach programme, 'Nyalleng Pii of WIPO and Marta Catarino of the University of Minho visited NMMU in May 2014 to deliver a workshop on the Patent Cooperation Treaty (PCT) system. WIPO is custodian of the PCT system which allows a patent application to be filed in over 140 countries simultaneously.

The workshop was arranged in conjunction with Eastern Cape Regional Technology Transfer and attended by researchers from Walter Sisulu University, University of Fort Hare and NMMU. The workshop highlighted the advantages of

South African patent applicants using the PCT system and allowed an opportunity for closer ties to be built with WIPO and the University of Minho.

Talking in San Francisco

Jaci Barnett moderated and spoke at a session on "International Technology Transfer Practices" at the Association of University Technology Managers Annual Meeting in February 2014 in San Francisco. Speakers included Dr Alison Campbell (Director of Knowledge Transfer Ireland), Dr Kevin Cullen (CEO of New South Innovations) and Takafumi Yamamoto (CEO of Todai, the Technology Transfer Office of the University of Tokyo).

The meeting, with over 1800 technology transfer participants from around the world, featured discussions about the structure, legislation, models, metrics, challenges and opportunities in their own country as alternative models to the accepted US-centric model.

Representing SA in a global alliance

Jaci Barnett is the Southern African Research and Innovation Management Association (SARIMA) representative on the Council of the Alliance of Technology Transfer Professionals (ATTP). ATTP is an association of technology transfer associations from around the world including Europe, United States, United Kingdom, Australasia, Sweden, Germany, Japan and South Africa. ATTP was established to provide a global standard of professional achievement and personal recognition for those working within technology transfer through achieving Registered Technology Transfer Professional (RTTP) status.

In March 2014, Jaci organised two Technology Transfer Colloquia to be held just before the annual ATTP Council meeting. The Colloquia took advantage of having some of the most experienced Technology Transfer Professionals in South Africa to attend the Council meeting.

Two workshops were held in Pretoria and in Cape Town. Key aspects discussed and debated were the reasons for doing technology transfer; the im-

regionally and internationally

importance of consultancy as a means of enhancing industry relationships; government initiatives to drive technology transfer; gap funding; and marketing of technology opportunities. There was a lot of debate about whether technology transfer is core business of the university and it was clear that there are no simple answers to this question.

The workshops were well attended and about 15 universities were represented. Hosting the Colloquia and the Council meeting was a fantastic opportunity to showcase South Africa and our strides in technology transfer. It was quite clear that SARIMA is an important association in ATTP and is considered to be a key player in technology transfer in the developing world in general, and in Africa, in particular.

UIIN Conference in Spain



Dr Lars Johnsson (CEO of UUAB Holding) and Mary-Ann Chetty.

Mary-Ann Chetty attended the University Industry Interaction Network (UIIN) Conference in Barcelona, Spain. The conference aimed to contribute to the improvement of the relationships between university and industry. UIIN is a network, offering a platform for those fostering the exchange of knowledge and information between universities and industry.

Expert panels in Ireland

Jaci Barnett was asked by Enterprise Ireland to form part of an international expert panel for the mid-term review of the TTSI2 programme (Technology Transfer Strengthening Initiative Phase 2). TTSI2 is a €23 million programme supporting the continued development of technology transfer offices (TTOs) within Ireland's universities and research organisations. The objective of

the programme is to sustain and develop appropriate skills within the TTOs, for the management and commercialisation of intellectual property (IP), and to facilitate meaningful knowledge transfer interactions with Irish industry. The panel reviewed six consortia and two stand alone universities against a range of criteria including commercialisation progress, capacity building and interaction within the consortium. The panel consisted of people from Norway, the US, the UK, Belgium and South Africa.

Of particular interest to Jaci was the realisation that many of the "developed" countries have similar innovation challenges to those faced by offices in South Africa: skills shortages, understanding by researchers, and so on. The funding provided has been critical in moving the Irish system forward – this is the same in South Africa where very little progress has been made by those universities who do not invest in technology transfer. Fortunately, the NMMU does invest in this area and funding has also been made available by the National Intellectual Property Management Office. This has allowed the NMMU to build capacity and understanding, as well as drive innovation locally, regionally and nationally.

ESASTAP Plus Exchange with Uppsala University



FROM LEFT: Pirkko Tamsen (Uppsala UI), Mary-Ann Chetty, Anette Pierson-Stache (Uppsala UI) and Stina Thor (Uppsala UI).

Mary-Ann Chetty visited Uppsala University in Sweden as part of the ESASTAP Plus exchange programme. One of the key objectives of the ESASTAP Plus Project is to expand cooperation between South Africa and Europe to specifically address innovation partnerships.

Mary-Ann was one of five Technology Transfer (TT) Professionals to be awarded the opportunity to spend two

weeks at a TTO abroad. The exchange programme allows experienced TT Professionals to share information and best practices in technology transfer with the exchange institutions. They also identify potential barriers for innovation collaboration between Europe and South Africa and explore opportunities for collaboration between their institutions.

Mary-Ann came back from the programme with ideas for more effective operations and functions as a technology transfer office. She also built a relationship with Uppsala University Innovation (UUI) and discussed potential collaborations between the NMMU and UUI.

While she was abroad, Mary-Ann attended two AIMday events which aided in the planning of AIMday to be held at NMMU (see page 5). The AIMday: Bioimaging was held in Uppsala University and the AIMday: Materials was held in Edinburgh.

Clusters in Germany



The H-Bahn monorail transports people between the University of Dortmund main campus and the Technology Park.

Jaci Barnett was asked by the Technology Innovation Agency to join a study tour to Germany to look at the concept of excellence clusters and industry clusters. The tour comprised a number of VCs, DVCs and Deans from various South African universities and provided an opportunity to learn about the German system as well as to make personal connections.

The German system appears to be really efficient with a seamless integration between universities, science councils and industry. However, this is driven by huge amounts of funding – each cluster gets €40 million - and is apparently not functioning as well in the eastern parts of the country. But impressive anyway!

Innovation award



At the annual Research, Teaching and Engagement Awards evening held in September, an Innovation Award was given to the Govan Mbeki Mathematics Development Unit (GMMDU). The award was in recognition of the major role played by the Unit in developing innovations around maths and science education locally, regionally and nationally. Specifically, the award was made for the successful commercialisation of the acclaimed DVD series “Touch Tutor[®]” developed by the GMMDU team. The series can assist teachers to explain Maths and Science principles to Grade 10, 11 and 12 learners.

This series is the first of its kind that: aligns with NCS and CAPS; has integrated use of technologies; has multiple representation of mathematical concepts and relationships; and promotes own-paced learning.

The Touch Tutor[®] DVD series is protected by a trade mark that was filed in 2012 as well as the copyright that subsists in the product. A license agreement was signed with Future Mobile Technologies (FMT) in 2012 for commercialisation of the Touch Tutor[®] series. FMT has encrypted the series onto an affordable tablet computer and has launched the product in retail stores such as The Foschini Group as well as online stores such as Kalahari. The first sales were

made in 2013 and the royalties generated are the largest royalty to date on any of the NMMU’s commercialised products. The GMMDU’s work in general, and the Touch Tutor[®] innovation in particular, has major social impact as the improvement of Maths and Science Education is critically important in the country.

The Department

New faces

The Department was pleased to welcome two new members to the team in 2014.



Fredrick Matongo (MSc Biochemistry) was appointed as Projects Officer after being a Chuma commercialisation candidate. He is responsible for the co-ordination of NMMU’s intellectual property-related projects and supports the commercialisation of NMMU’s intellectual property portfolio.



Naazlene Patel (MTech Biotechnology) joined the department as the Innovation Officer. She is responsible for the coordination, administration and support of commercialisation of NMMU Intellectual Property. Naazlene also works closely with Propella.



BACK: **Wilma Maritz** (PR & Marketing Administrator), **Elsa van Wyk** (Secretary), **Non-tando Saki** (Financial Administrator), **Jaci Barnett** (Director), **Naazlene Patel** (Innovation Officer). FRONT: **Fredrick Matongo** (Projects Officer), **Mary-Ann Chetty** (Senior Innovation Manager)

THINK INNOVATE DISCLOSE™

The Department appreciates the support received for the “THINK.INNOVATE.DISCLOSE” campaign designed to attract new disclosures. Keep an eye out for more events and activities in 2015.