

# EBIT TIMES

2023

Alumni newsletter of the Faculty of Engineering, Built Environment and Information Technology, University of Pretoria



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

Faculty of Engineering,  
Built Environment and  
Information Technology

Fakulteit Ingenieurswese, Bou-omgewing en  
Inligtingtegnologie / Lefapha la Boetšenera,  
Tikologo ya Kago le Theknolotsi ya Tshedimošo

Make today matter

P1

## EBIT SHINES AT UP ACADEMIC ACHIEVERS' AWARDS

The Faculty's researchers are rising to the challenge of making a significant contribution to society at large. We encourage all members of the EBIT Generation to embrace independent thinking and a human-centred perspective on technology to change the world.

P2

## NEW LEADERSHIP PUTS EBIT ON THE PATH TO BECOMING A REIMAGINED FACULTY

The heartbeat of the Faculty is innovation: Finding novel solutions that lead to real-world change.



READ *INNOVATE* TO SEE  
HOW THE FACULTY'S  
RESEARCH IS MAKING A  
REAL-WORLD DIFFERENCE

Innovating our tomorrow

P3

## 2023 GLOBAL QUANSER SUSTAINABILITY AWARD WINNER



P5

## RECRUITING A FUTURE GENERATION OF LEADERS IN COLLABORATION WITH INDUSTRY PARTNERS

We look forward to receiving study applications from a new generation of change-makers.

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# EBIT SHINES AT UP ACADEMIC ACHIEVERS' AWARDS

Doing research that *matters* is one of the core themes of the University of Pretoria (UP). The institution aspires to become an African global university, exerting influence through three major pathways: teaching and learning, research and service to society. The EBIT researchers who have been named Academic Achievers contribute significantly to this institutional goal.



## EBIT makes a clean sweep in the teaching and learning category



NATIONAL RESEARCH FOUNDATION (NRF)-RATED RESEARCHERS

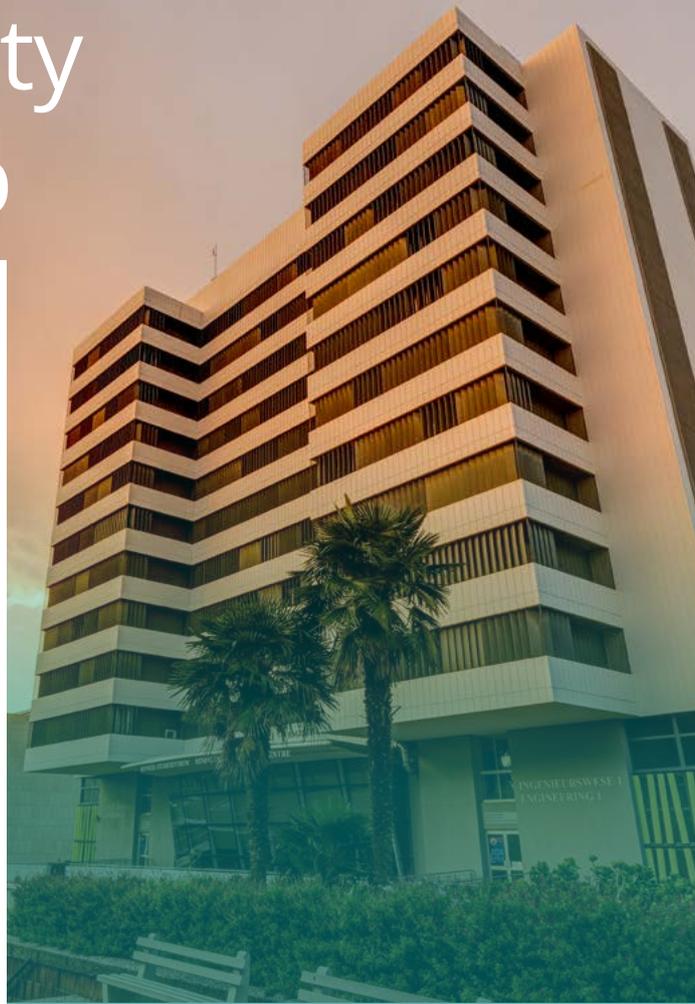


**Download** the full publication to learn more about the winners, their research and their special projects.

# New Faculty leadership

With the appointment of Prof Wynand JvdM Steyn as the new Dean of the Faculty of Engineering, Built Environment and Information Technology (EBIT), and Prof James Maina as the Faculty's new Deputy Dean: Research and Postgraduate Studies, the Faculty is entering an exciting new era. They are supported by Prof Alta van der Merwe, the Faculty's Deputy Dean: Teaching and Learning.

The Faculty's slogan, "Innovating our tomorrow" will keep it on the path of pursuing innovation that leads to real-world change on the outside for the good of humanity and the planet, and innovation from within.



Prof Wynand JvdM Steyn



Prof James Maina



Prof Alta van der Merwe

*Learn more about our reimagined Faculty.*

## Immersive learning prepares learners for the future

**In EBIT, we believe that preparing our learners for the future entails more than just ensuring that the course content is up to date and in touch with the latest developments in industry. It means preparing our students for the classroom of the future.**

We have embraced the concept of **immersive learning** as an innovative teaching approach to provide learners with a deep experience of reality. Through virtual reality (VR) tools, we immerse

learners in the learning experience in a way that allows them to influence the outcomes. This approach enables learners to learn about the work they will be doing when they enter industry in a fail-safe, virtual environment before they even encounter it in the real world. This takes experiential learning to the next level.

In this way, we can take the classroom to a remote and unsafe environment such as an underground mine, or expose students to equipment and instruments in virtual reality before they work with them in the laboratory.

This not only reduces the chance of accidents, but increases accessibility. Exposing our students to emerging teaching technologies such as VR tools allow them to make the mindshift towards a future in which their unique talents and experiences will further the development and growth of sustainable communities.





# The transdisciplinary classroom leads to dynamic learning

**Within the Faculty, students and academics who are involved in teaching and research that relate to the various stages of a construction project are developing a transdisciplinary mindset. This transformation of traditional practices is leading to a radical shift in higher education that is equipping graduates with the skills they need when they enter the world of work.**

Members of the departments of Architecture and Civil Engineering have embarked on an innovative approach to built environment education. This approach achieved international recognition for its impact, scalability and sustainability when it received the

**Quanser Global Sustainability Award for 2023.** It was the only shortlisted project from Africa.

This Award was established in 2022 to address global challenges such as climate change, biodiversity loss, and waste and pollution. This annual accolade acknowledges exceptional academic and research professionals who are dedicated to investigating and advancing sustainable engineering practices within their specific domains.

The project that was submitted for the award focused on **improving circular value chains in construction through transdisciplinary education.** It focused on leveraging Building Information Modelling (BIM) for the re-use of building material.

According to Dr Johann van der Merwe, a senior lecturer in the Department of Civil Engineering, the global construction industry contributes significantly to the emission of greenhouse gases and depletion of resources. "This is exacerbated by substantial wastage

during both the construction and demolition processes." Adopting a circular value chain for building materials presents a compelling opportunity to address these challenges, while reducing embodied carbon, dependency on raw materials and wasteful practices. Since so much building waste ends up in the country's landfill sites, this has both a financial and an environmental impact.

Dr Calayde Davey, a senior lecturer in the Department of Architecture explains: "While the traditional approach to teaching circularity is useful in addressing immediate concerns of waste in the construction industry, it falls short of fostering a fundamental paradigm shift among practitioners." This shift is necessary not only to address the symptoms of wastage, but also to delve into the root causes, all within a broader, long-term ecological perspective. Dr Davey believes that the concept of waste must be redefined altogether. Instead of viewing waste as "valueless", she advocates for a transformation in perspective where waste is recognised as a fundamental and valuable part of our urban-ecological world.

***Read more***



**WATCH**

# EBIT mourns the passing of a stalwart member of the engineering community

It is with great sadness that the University of Pretoria learnt of the passing of a Dean in the former Faculty of Engineering and former member of the University's executive management, **Prof JAG (Jan) Malherbe**, on 7 May 2023 at the age of 84. As a distinguished scholar, researcher and innovator, he leaves behind a lasting legacy in his field.

[Read more](#)



## What do you want your legacy to be? At EBIT, we want to show our **impact through innovation**



The 2023 EBIT Concert pulled out all the stops to take its audience on a musical journey through the universe. With its unique combination of music and digital storytelling, the programme highlighted the incredible impact of innovation, achieved by upholding the dignity and wellbeing of all human beings. This spectacular event is a collaborative showcase between the Dean's Office and the University of Pretoria Symphony Orchestra (UPS), under the guidance of conductor Schalk van der Merwe. Its purpose is to thank the Faculty's alumni and partners for their continued support.

[Watch the highlights](#)



## EXCITING NEWS

You can now enrol for a master's degree after your four-year BEng degree.

# RECRUITING A FUTURE GENERATION OF LEADERS IN COLLABORATION WITH INDUSTRY PARTNERS

The innovative teaching and learning initiatives at EBIT and the Faculty of Health Sciences were exhibited to prospective students at various recruitment events during the course of the year, including the 21st Sasol Techno X Science, Maths, Engineering and Technology Exhibition, held in Sasolburg from 14 to 18 August 2023. This exhibition, which targeted learners from marginalised communities in Grade 8 to Grade 12, focused on exposing them to the infinite possibilities of a career in science, technology, engineering and mathematics. The University's immersive learning exhibition received the **Innovation Excellence Award** at this event.



Team members from left: Mpho Makhuvha, Nontuthuzelo Sono, Similo Siyenga, Estie Powell, Calvin Nel and Thabo Masenamela.

The Faculty has an active recruitment drive in place to attract prospective students who wish to make an impact in the lives of people and the planet, and to innovate our tomorrow. Its recruitment of a new generation of leaders and innovators focuses on immersive learning. This formed an important element of both its annual EBIT Week programme and the #Choose UP Day. A new initiative was the Faculty's involvement in the Aardklop Pronk Podium event, which featured dramatic talent at school level, and brought art and technology together. Eight lucky learners received bursaries to study at the University of Pretoria. **Read more**

## UP EBIT Week shows increasing number of female learners interested in STEM subjects

The 2023 EBIT Week drew three times as many female learners to its four-day holiday programme as it did during the 2021 EBIT Week.

**Read more**



## BRINGING LIFE TO THE ENGINEERING CURRICULUM

Engineering schools around the world have an important role to play in equipping a new generation of innovators with the skills they need to address global challenges. This will contribute to a sustainable future for both mankind and the planet, while improving graduates' employability and readiness for the world of work. South African higher education institutions are committed to delivering engineering graduates of distinction. An important element of curricular reform is the integration of technical and non-technical competencies (often called soft skills or generic competencies) into engineering curricula. An exciting collaboration, which operates under the name Innovative Engineering Curriculum, is showcasing strategies for engineering curriculum transformation across South African higher education institutions. It has the potential to radically change the South African engineering education landscape. EBIT's **Dr Lelanie Smith** is one of the project's representatives.

***Read more***



## INTRODUCING ROBOTICS TO SCHOOL LEARNERS

Students in the Faculty's Community-based Project (JCP) module joined forces with Sifiso EdTech, a South African-based international provider of specialised coding and robotics products, teacher training, technology curricula and services to present a Robotics Holiday Bootcamp for school learners. The bootcamp successfully inspired interest in coding, robotics, and STEM subjects among the learners, aligning it with UP's mission to contribute to a knowledge-based society. The project not only achieved its objectives, but also had a meaningful impact on the local community.

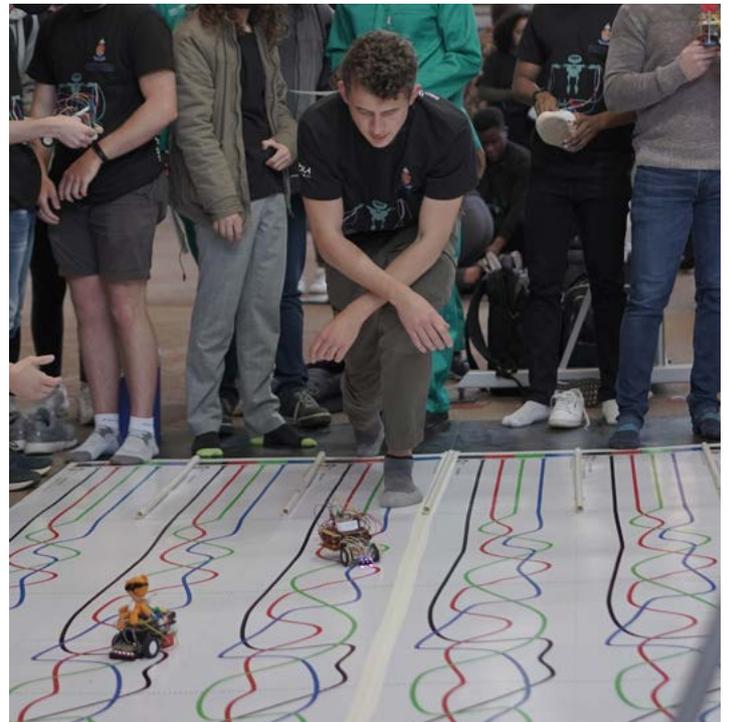
***Read more***

## THE SPONTANEOUS AND ORGANIC GROWTH OF AN INTEGRATED CURRICULUM

A team across the three domains of electrical, electronic and computer engineering have succeeded in combining their talents to develop a unique intervention for students to apply what they have learnt in an engaging and a stimulating way across several modules. This project, which was the joint winner of the University's Teaching Excellence Award, incorporated several modules in the Department's curricula. The team comprised Prof Tania Hanekom (third-year Microcontrollers), Prof Trudi Joubert (second-year Digital Systems and third-year Analogue Electronics), Prof Tinus Stander and Dr Werner Badenhorst (third-year design modules), Prof Ian Craig and Prof Derik le Roux (third-year Control Systems), Pieter Roodt (the Robot School) and Willem van Jaarsveld (EBIT Robot Race).

This integrated initiative had two objectives: to provide world-class engineering education to enable students to make a meaningful contribution to addressing local and global challenges through technology; and to spark an interest in electrical, electronic and computer engineering among learners.

***Read more***





# Projects in the School for the Built Environment contribute to urban upliftment

Postgraduate students in the School for the Built Environment have been making a difference in the informal settlements within the City of Tshwane Metropolitan Municipality since 2016. The research activities of the Department of Architecture's Unit for Urban Citizenship (UUC) are not only addressing the need of the residents of Plastic View and Melusi for a sustainable built environment, but also for basic services and infrastructure.

The Unit's activities are driven by a desire to embed a culture of participation to achieve collaborative urban citizenship under the supervision of the Unit's Director, Dr Carin Combrinck.

The UUC strives to develop the scholarship of civil engagement and participatory development within the context of a complex, emergent African urbanism. It simultaneously strives to embed a culture of responsible and collaborative urban citizenship in both its graduates and the communities within which it works.

## It has the following aims:

- Facilitate transdisciplinary research on urban citizenship
- Focus community engagement and strengthen social impact through evidence-based multi-scalar interventions
- Support the socio-economic and spatial transformation imperatives of the national development agenda

- Give effect to the United Nations' Sustainable Development Goals

The Unit offers a platform for vertical integration between study years to incorporate a socially responsive teaching and learning philosophy into the programmes of the Department of Architecture. It also establishes an interdisciplinary network of collaboration that can achieve the horizontal integration of its objectives with specific stakeholders through inter-faculty engagement.

According to Dr Combrinck, by facilitating collaboration with its internal and external stakeholders, the Department's teaching and research can be aligned to improve impact. "Spatial design plays an integral role in community development, especially when an interdisciplinary view is taken towards social innovation and urban citizenship." In the process, the role of a university, as an anchor institution and social actor, is embedded in the community, and is promoted and

supported through a scholarship of engagement.

Its focus on the transformation of the curriculum rests on three pillars: engaged pedagogy, engaged research and community action laboratories. Its objective of participatory engagement is achieved by accompanying its students on a journey of engagement. It starts in students' undergraduate years by creating an awareness of community engagement.

This proceeds to the act of philanthropy through their involvement in the Faculty's community-based project module. As students progress through their undergraduate programme and participate in internships, they become aware of their role as activists for the community. Solidarity is achieved in their postgraduate studies, followed by collaboration in their master's research, and citizenship during their doctoral studies.

***Read more***

# Academic Excellence Award for QS lecturer



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**Danie Hoffman**, a senior lecturer in the Department of Construction Economics and leader of the Department's Quantity Surveying (QS) Programme, received the Pacific Association of Quantity Surveyors (PAQS) Academic Excellence Award. This award recognises individuals or institutions that excel in the area of academic performance or research and development.

## YOUNG ENGINEERS SET TO IMPRESS WITH THE FREEDOM WON RANGE

In pursuit of solving real-world challenges, EBIT's final-year electrical engineering students engage in design projects that transcend theory to become tangible solutions.

Traditionally, the University's final-year laboratories and student projects have relied on lead acid batteries, until a sponsorship from the LiFePO<sub>4</sub> battery manufacturer, Freedom Won, changed the landscape on 17 August 2023. The donation of Freedom Won 12V 100Ah batteries and a LiTE 5/4 model marked the inception of a shift towards a lithium iron phosphate-powered laboratory.

[Read more](#)

## STUDENT ACHIEVEMENTS



### QS STUDENT TAKES GOLD

The Association of South African Quantity Surveyors (ASAQS) recognises the outstanding academic achievements of quantity surveying (QS) students nationally.

The ASAQS Gold Medal was awarded to BSc Quantity Surveying graduate, **Mckayla McMaster**. The award goes to a student whose academic achievements are of outstanding merit and whose personal qualities promise to positively contribute to the profession.

[Read more](#)



### EMPOWERING HEALTHCARE THROUGH INDUSTRIAL ENGINEERING

**Cayla Janse van Rensburg**, EBIT industrial engineering graduate, was accepted to specialise in health data science at the University of Cambridge in England.

[Read more](#)

She aims to develop models to capture the dynamic movement and spread of infectious diseases in populations. These models are valuable, as they allow us to "test" different interventions without actually implementing them. In this way, we can determine which intervention will be the most effective and only implement that solution.



The ASAQS and Turner & Townsend Great Outcomes Award for outstanding academic achievement in the first two years of undergraduate study went to **Tyla Mundie**, who completed her BSc Quantity Surveying degree with distinction. Tyla has a bent for numbers, and enjoys solving problems and thinking out of the box!



**Amber Freestone**, a BSc Quantity Surveying (Hons) student, was selected as one of the ten finalists in the Green Building Council of South Africa (GBCSA) IFC Women in Green Building Competition. This is a testament to the growing recognition of women's pivotal role in the property and construction sectors.

# INAUGURAL LECTURES FROM DEPARTMENT HEADS PROVIDE NOVEL INSIGHT IN THE BUILT ENVIRONMENT



## REGENERATING A COLLAPSING WORLD: EFFECTING TRANSFORMATION THROUGH HEAD, HEART AND HANDS

**Prof Chrisna du Plessis**  
Head of Department:  
Department of Architecture

According to Prof Du Plessis, the global polycrisis that was created by the interplays among global socio-political instability, increasing inequality, accelerating climate change, ecosystem loss and pervasive pollution by the residues of the second and third industrial revolutions, and the lifestyles they enable, is creating an unfamiliar and essentially unknowable world in which the cities of our future will have to function.

Nonetheless, crisis and collapse also bring opportunities for renewal as the cracks in old, dysfunctional systems provide fertile ground for the seeds of systems transformation to take root. However, creating an abundant and thriving future in which all members of the community of life can flourish requires a radical change in how we see the place and role of humans in the future development of the global socio-ecological system.

In her address, she mapped the evolution of sustainability thinking and how this evolution results from a shift in the world view, providing new values and purpose. She discussed how a regenerative approach changes the processes and products of built environment design by integrating pathways laid out by the head (knowledge systems and reflection), the heart (values and attitudes) and the hand (praxis).

***Read more***



## EVOLUTIONARY URBANISM: BREAKING THE CYCLE OF “MECHANISTIC” CHANGE

**Prof Karina Landman**  
Head of Department: Department  
of Town and Regional Planning

According to Prof Landman, cities and urban spaces are changing rapidly, both worldwide and in South Africa. “New challenges force planners to deal with these changes in ways that will consider the future wellbeing of the planet and its people.” African cities are urbanising at a rapid rate, while poverty and inequality create significant challenges for service delivery and housing provision. Urban areas are characterised by fragmentation, segregation, low-density sprawl and a disconnect from nature. In response, post-apartheid planning and development legislation and policies have repeatedly called for spatial transformation to address many of these challenges.

She reconsidered these challenges by focusing on the spatial mitigation, adaptation and regeneration that has taken place in the country since 1994. She highlighted prominent areas, processes and products that influenced the urban landscape during different periods and at various levels. In the process, she reconsidered the meaning of these changes for sustainable development, and the implications for urban planning in South Africa.

She highlighted the need to move beyond a simplistic interpretation of spatial transformation and break the cycle of mechanistic change.

***Read more***



**State-of-the-art  
mobile soils  
laboratory  
for tailings  
engineering**

*Read more*



# NEW LEADERSHIP IN CIVIL ENGINEERING



**Prof Hannes Gräbe**  
Head of Department:  
Department of Civil Engineering

*Read more*

## TRACKS OF DISCOVERY, INNOVATION AND EDUCATION: INSPIRING A NEW FUTURE FOR RAILWAY ENGINEERING

In his inaugural address, Prof Gräbe explained how the railway structure's foundation, supporting ballast, sleepers and rails significantly influence load-carrying capacity and the quality of a journey by rail. While laboratory settings facilitate the development of innovations in this area, industry applications necessitate the ability to measure track component performance through sensor technologies on operational railway lines. He explained how innovations in this field have focused on smart railway monitoring and smart track components. This followed the development of optics, sensor technologies, communication protocols, artificial intelligence and machine learning.

At the International Rail Safety Council Conference, held at the Century City Conference Centre in Cape Town from 2 to 6 October 2023, Prof Gräbe and members of the University's railway engineering programme had the opportunity of showcasing various research initiatives in railway engineering. This included scaled experiments and demonstrations of innovative responses to rail safety, as even the smallest event, incident or issue can have major implications. The main aim of the demonstration was to raise rail safety awareness, thereby saving lives and making railways safer.

# Excellence in EBIT's Department of Mining Engineering



**Prof Ronny Webber-Youngman**, Head of the Department of Mining Engineering, received the Günter Fettweis Award of the international Society of Mining Professors (SOMP). This award recognises active members of the society for accomplishments and excellence in education, research and professional service to advance the discipline, and for significant contributions to the society.



**Prof Francois Malan**, the Department's Research Lead, has been recognised as a Fellow of the International Society for Rock Mechanics (ISRM). This highest and most senior grade of membership of the ISRM is conferred on individuals who have achieved outstanding accomplishments in the field of rock engineering, and who have contributed to the professional community.



**Jannie Maritz**, the Department's Teaching and Learning Lead, has been elected Vice-President for Africa of the International Society for Rock Mechanics and Rock Engineers (ISRM) for the term 2023–2027. He will be representing the three countries in Africa that are associated to the ISRM: South Africa, Tunisia and Zimbabwe.

## PEER-REVIEWED JOURNAL DEVOTED TO UP'S ROCK ENGINEERING RESEARCH

The Department's rock engineering research is featured in the *Journal of the Southern African Institute of Mining and Metallurgy* (SAIMM), Volume 123, No. 5. **Read more**



## WOMEN HAVE AN EXCITING ROLE TO PLAY IN THE MINING INDUSTRY

EBIT alumna, Nozipho Dlamini, was the first woman President of the South African Colliery Managers' Association (SACMA) in 2022 and is a member of the University's Mining Engineering Advisory Board. She has shared her view on the exciting role women can play in the mining industry.

**"There's a big demand for women in core technical roles in mining, and I believe women are best suited for these roles."**

**Read the article**



**Read the  
Department  
of Mining  
Engineering's  
Annual Review**



## **PROF SCHALK KOK, Head of the Department of Mechanical and Aeronautical Engineering, has been named Chair of EBIT's School of Engineering.**

### **INAUGURAL LECTURES FROM DEPARTMENT EXPERTS**



#### **WHEN NOTHING SEEMS TO GO RIGHT, WHY NOT GO LEFT? IN SEARCH OF ALTERNATIVE PERSPECTIVES AND PARADIGMS**

**Prof Nico Wilke**

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Prof Wilke aligned his perspective on research with that of the Hungarian biochemist and Nobel Prize winner, Albert Szent-Gyorgyi, who stated: "Research is to see what everybody else has seen, and to think what nobody else has thought". Prof Wilke offered a classical viewpoint of three categories of problems researchers typically encounter: problems with many solutions; problems with only one solution; and problems with no solution.

He presented an alternative viewpoint, stating that a problem's category is not necessarily fixed. This epiphany inspires a researcher to search for alternative perspectives and paradigms.

He concluded his address by stating that academia needs to value ideas and thinking again, as it is only by continuously considering existing knowledge from new perspectives that researchers can ensure sustainable growth in science.

***Read more in Innovate***



#### **FINDING NEW FORMS OF HEAT TRANSFER ON THE NANO SCALE**

**Prof Mohsen Sharifpur**

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Prof Sharifpur describes nanofluids as nanoparticles mixed in a base fluid. They are novel heat transfer fluids and have provided evidence of unique behaviour in thermal fluid systems. These fluids are primarily used for their enhanced thermal properties as coolants in equipment such as heat exchangers, electronic cooling systems and radiators. Their application can, however, be extended to solar-thermal, nuclear heat transport, controlling optical properties, polymerase chain reaction, and even drug delivery and biomedical technology.

He observed that more research is required to improve our principal knowledge of different aspects of nanofluids. This includes the development of comprehensive hybrid models, determining the properties of nanofluids and improving their stability. He believes there to be a lack of principal research into methods to enhance heat transfer on the nano scale.

***Read more in Innovate***

# INAUGURAL LECTURES FROM EXPERTS IN ELECTRICAL, ELECTRONIC AND COMPUTER ENGINEERING



**Prof Raj Naidoo, Head of Department**

## TRANSFORMING THE ELECTRICITY GRID THROUGH DIGITAL INTERVENTIONS

According to Prof Naidoo, the Fourth Industrial Revolution (4IR) is a new epoch in social and economic life. It is driven by technological advancements that will broaden and deepen the connections between the biological, physical and digital worlds in unprecedented and unpredictable ways. Digitalisation has transformed many industries, and is continuing to transform the world. Driven by operational and business needs, it can accelerate electric grid transformation, while delivering security, reliability, operational excellence and cost objectives.

Hydrogen fuel cell management systems is an emerging field that will contribute vastly to the just energy transition.



**Prof Pieter de Villiers**

## SEEING A DYNAMIC WORLD THROUGH THE EYES OF SENSORS

According to Prof De Villiers, the fusion and interpretation of data from multiple sources and sensors are important for automating complex tasks, such as tracking pedestrians or aircraft or coordinating robots or autonomous vehicles in complex and dynamic environments.

He introduced a philosophical view of the sensing problem, how it is formalised in Bayesian probability, how the Bayesian models are used to make inferences and predictions, and how these inferences are then used to take action.

He has a future vision for sensor and data fusion research, where intelligent sensing in machine automation is becoming increasingly prevalent.

***Read more***



**Prof Tinus Stander**

## MAKING BIG WAVES WITH SMALL WAVES

According to Prof Stander, systems that operate in the microwave and mm-wave frequency range have applications that span the breadth of human endeavours. They are used to connect, see, navigate, heal and understand our universe.

The breadth of these applications is matched only by the breadth of challenges facing the microwave engineer to develop better, smarter, smaller, cheaper, greener and more impactful solutions to these challenges.

Ongoing research in key areas can help equip the next generation of microwave engineers to face new challenges that arise in the field of microwave and mm-wave microelectronics

***Read more***



***Read the Department of Electrical, Electronic and Computer Engineering's Annual Newsletter***



## PROF INA FOURIE, Head of the Department of Information Science, has been appointed as the Chair-Elect of the iSchools Board

# “Let’s work towards creating a future where humans and machines coexist.”

Technological advancements such as artificial intelligence (AI) are changing the world as we know it, but by harnessing the power of design science research, we can create a future where technology enables humans to flourish rather than be a source of further division.

This was discussed at the recent 18th International Conference on Design Science Research in Information Systems and Technology (DESRIST 2023), hosted at the University of Pretoria’s (UP) Future Africa Institute under the theme ‘Society 5.0’.

*Read more*

## Ethical concerns with Generative AI

**Artificial intelligence (AI), particularly its generative forms, is revolutionising various facets of human life, from communication to entertainment, and education is no exception. This category of AI specialises in creating new, original content, including writing text and code, producing images or music, or even generating predictions for complex problems. The fundamental principle behind Generative AI is that these models can learn patterns in data and use this understanding to produce new content, similar to the input data, but distinct and unique in its own right. At the end of 2022, OpenAI launched ChatGPT, a content creation platform that uses Generative AI.**



Of particular interest to members of the Department of Information Science’s Data, Information and Computer Ethics Research Group are the ethical concerns related to ChatGPT and other forms of Generative AI. This has given rise, among other things, to research conducted in the Department’s African Centre of Excellence for Information Ethics, as well as the development of a guideline document for lecturers to leverage Generative AI for the enhancement of teaching and learning.

*Read more in Innovate*

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