



# IEOM Society International

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November – Happenings

2018 Volume 3, Issue 4

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## IEOM Society First African Conference, Pretoria 2018

The First African IEOM Society Conference was held in Pretoria on October 30-November 2, 2018. It was an excellent conference with more than 450 participants in attendance. The conference venue was the Saint George Hotel located at 58 Mkhathshlua Ave, Doornkloof, Pretoria 0132, South Africa. Many students from South Africa participated in the event. More than 30 countries were represented and participated in the conference

Conference was chaired by:

- Dr. Bolanle Tolulope Abe, Tshwane University of Technology (TUT)
- Prof. Mukondeleli Grace Kanakana, University of South Africa (UNISA)
- Prof. Charles Mbohwa, University of Johannesburg (UJ)
- Prof. Khumbulani Mpofo, Tshwane University of Technology (TUT)
- Prof. Thomas Tengen, Vaal University of Technology (VUT)
- Prof. John Alfred Trimble, Tshwane University of Technology (TUT)
- Prof. Sarma Yadavalli, University of Pretoria (UP)

Key conference highlights:

- Conference program: <http://www.ieomsociety.org/program-southafrica2018.pdf>.
- **The welcome message** from Livhuwani Tommy Makhode, Deputy Director-General: Institutional Planning and Support, Department of Science and Technology, Republic of South Africa. This presentation was followed by the opening **keynote speech** by Dr. Rupy Sawhney, Professor and Heath Fellow in Business & Engineering, Department of Industrial and Systems Engineering and Executive Director of CASRE (Center for Advanced System, Research and Education), University of Knoxville, Knoxville, Tennessee, USA.
- The Global Engineering Education session had 30 distinguished speakers who will focus on the readiness of engineering graduates around the world.
- Industry Solutions includes 20 outstanding speakers.
- 300 technical papers
- A panel session on Women in Industry and Academia with panel members
- Workshop on entrepreneurship
- Proceedings papers and abstracts will be available on this link after conference: <http://ieomsociety.org/southafrica2018/proceedings/>.
- Poster presenters can display their posters foyer area of Saint George Hotel.
- Best track papers were awarded at the conference Award Dinner on Wednesday evening. This will include distinguished academic and industry leaders, educators, distinguished service awards, industry solutions awards and global engineering education awards.
- This conference provided an exceptional networking opportunity with participants representing more than 30 countries.

The Conference Organizing Committee appreciates your participation and hope you had an enjoyable learning experience at the conference. We hope you had an opportunity to explore South Africa with its many outstanding attractions and historic sites such as the cradle of human kind, apartheid museum, national parks - including the Kruger, the castle of good hope, Nelson Mandela's capture site, Isandlwana battle fields, Robben Island, Voortrekker monument, the beautiful countryside scenery, the Karoo's flat topography hosting

the square kilometer array radio telescopes and, of course, our exquisite university campuses, amongst others.

**Keynote Speakers – 1<sup>st</sup> African Conference**

- Livhuwani Tommy Makhode, Deputy Director-General: Institutional Planning and Support, Department of Science and Technology, Republic of South Africa
- Dr. Rupy Sawhney, Professor and Heath Fellow in Business & Engineering, Department of Industrial and Systems Engineering and Executive Director of CASRE (Center for Advanced System, Research and Education), University of Knoxville, Knoxville, Tennessee, USA
- Khaya Madiba, Bogie - Subsystem & Maintenance Engineer, Gibela-Rail, South Africa
- Cobus Oosthuizen, Chief Executive Officer, ESTEQ, Pretoria, Gauteng, South Africa
- Professor Angina Parekh, Deputy Vice Chancellor: Academic, University of Johannesburg, South Africa and Former Special Advisor on Higher Education to the Minister of Education
- Dr. Abu Masud, P.E., Boeing Global Engineering Professor Emeritus, Professor of Industrial and Manufacturing Engineering, Wichita State University, Kansas, USA – “Student Learning: Assessment and Improvement”
- Arthur Mutambara, Former Deputy Prime Minister of Zimbabwe, Visiting Full Professor - University of Johannesburg
- Dr. AAA. Atayero, Vice Chancellor, Covenant University, Ota, Ogun State, Nigeria
- Dr. Sundaravalli Narayanaswami, Indian Institute of Management, Ahmedabad, India
- Dr. Eugén Ranft, Operations Manager, Eaton Electric (South Africa) (Pty) Ltd, Johannesburg, South Africa

**Global Engineering Education Speakers – 1<sup>st</sup> African Conference**

- Dr. Olufemi Adetunji, Department of Industrial and Systems Engineering , University of Pretoria
- Ngaka Mosia, Department of Mechanical and Industrial Engineering, School of Engineering and a College of Science, Engineering and Technology , University of South Africa (Unisa), Gauteng, South Africa
- Bontle Tladi, University of the Witwatersrand, Johannesburg, South Africa
- Dr. Kirti Menon , Senior Director of Academic Planning, Quality Promotion and Academic Staff Development , University of Johannesburg, South Africa
- Gloria Castrillón, Director, Academic Planning and Quality Promotion , University of Johannesburg , South Africa
- Dr. Michael Mutingi, Associate Professor - Industrial Engineering, Namibia University of Science & Technology, Windhoek, Namibia
- Dr. Arno Louw, Senior Specialist: Instructional Design (e-Learning): Manager: Centre for Academic Technologies Laboratory (CAT Lab), Division for Academic Development and Support (ADS), University of Johannesburg
- Dr. William Msekiwa Goriwondo, Executive Dean, Faculty of Industrial Technology, National University of Science and Technology (NUST), Zimbabwe
- Dr. Mohammad Sarwar Morshed, Professor of Industrial and Production Engineering, Ahsanullah University of Science and Technology (AUST), Dhaka, Bangladesh
- Prof Clinton Aigbavboa., Vice Dean, Postgraduate Studies, Research and Innovation, Head-Sustainable Human Settlement and Construction Research Centre, Faculty of Engineering and the Built Environment, University of Johannesburg
- Dr. Imad Alsyouf, Associate Professor, Sustainability Office, Director, Industrial Engineering & Engineering Management Department, College of Engineering, University of Sharjah, United Arab Emirates (UAE)
- Deborah Oluwafunke Adedokun, Department of Building & Quantity Surveying, College of Environmental Sciences, Joseph Ayo Babalola University, Ikeji-Arakeji, Nigeria
- Didier ILUNGA , Researcher, Civil Engineering , University of Johannesburg
- Dr. Hannelie Nel , Senior Lecturer , Postgraduate School of Engineering Management, Faculty of Engineering and the Built Environment, University of Johannesburg
- Matimba Mkansi, Industrial Engineering , University of the Witwatersrand, Johannesburg, South Africa
- Chioniso Kuchwa-Dube , School of Mechanical, Industrial and Aeronautical Engineering, University of the Witwatersrand, Johannesburg, South Africa
- Bruno Emwanu, Senior Lecturer , University of the Witwatersrand, Johannesburg, South Africa

- Dr. Joe E. Amadi-Echendu, Professor, Engineering and Technology Management, University of Pretoria, South Africa and Director, Institute of Engineering Technology and Innovation Management, UNIPORT
- Dr. Anthea Amadi-Echendu, Senior Lecturer , Acting Chair of the Department of Operations Management, University of South Africa
- John Ikome, Department of Industrial Engineering and Operation Management , Vaal University of Technology, South Africa
- Prof, Khumbulani Mpofo, Gibela Research Chair in Manufacturing and Skills Development and Professor – Industrial Engineering Department, Tshwane University of Technology (TUT), Pretoria, South Africa
- Prof. John Alfred Trimble, Professor, Department of Industrial Engineering, Tshwane University of Technology (TUT), Pretoria, South Africa
- Prof. Thomas Tengen, Associate Professor and Head, Department of Industrial Engineering and Operations Management, Vaal University of Technology (VUT), South Africa
- Dr. Bolanle Tolulope Abe, Senior Lecturer and Acting Academic Manager, Department of Electrical Engineering, Tshwane University of Technology, eMalahleni campus, South Africa
- Ms. Sebonkile Thaba, Lecturer and Community Engagement Coordinator , Department of Transport and Supply, University of Johannesburg, South Africa
- Dr. Grace Mukondeleli Kanakana – Katumba, Deputy Executive Dean, College of Science, Engineering and Technology, University of South Africa (UNISA), Florida, Gauteng, South Africa
- Professor Donald M. Reimer, President, The Small Business Strategy Group, Detroit, Michigan, USA and Former Director – Entrepreneurship Program at Lawrence Technological University, Southfield, Michigan, USA

**Industry Solutions Speakers** including Panel speaker of Women in Industry and Academia (WIIA) – 1<sup>st</sup> African Conference

- Professor Arnesh Telukdarie, Associate Professor in Engineering Management, University of Johannesburg, South Africa
- George F. Mukwawaya, University of the Witwatersrand
- Bruno Emwanu, Senior Lecturer, University of the Witwatersrand, Johannesburg
- Sibusiso Mdakane, University of the Witwatersrand, Johannesburg, South Africa
- Uduakobong E. Ekpenyong, Electrical Engineer, Senior Consultant in the Asset Management Unit, Aurecon, South Africa
- Dr. Nita Sukdeo, University of Johannesburg, South Africa
- Dr. Hannelie Nel, Senior Lecturer, Postgraduate School of Engineering Management, Faculty of Engineering and the Built Environment, University of Johannesburg
- Eveth Nkeiruka Nwobodo-Anyadiegwu, Lecturer, Faculty of Engineering and Built Environment, University of Johannesburg
- Yvette Shibambo, Senior Project Manager , Eskom - Enterprise Division, Witbank Area, South Africa
- Dimakatso Lesabe, Head: Quality Assurance at City of Cape Town, Johannesburg Area, South Africa
- Rendani Luvhengo, Freelance Consultant, Johannesburg, South Africa
- Natasha Ramkirpal, Production and Process Improvement Specialist, Coca-Cola Beverages South Africa (CCBSA) - part of the business's Manufacturing Centre of Excellence
- Charlaine Baartjes, Founding Partner, EcoPartners
- Dr. Anthea Amadi-Echendu, Senior Lecturer , Acting Chair of the Department of Operations Management, University of South Africa
- Mohamed Sameer Hoosain, University of Johannesburg (UJ), South Africa
- Dr. Babu Sena Paul , Director to the Institute for Intelligent Systems, University of Johannesburg
- Wesley Doorsamy , Senior Lecturer , University of Johannesburg, South Africa
- Professor Sunday Olayinka Oyedepo , Head of Department of Mechanical Engineering , Covenant University, Ota, Ogun State, Nigeria
- Dr. Isaac O.S. Fayomi , Professor, Department of Chemical, Metallurgical and Materials Engineering, Tshwane University of Technology, Pretoria, South Africa
- Engineer Dirisu Joseph , Researcher, Department of Mechanical Engineering, Covenant University, Ota, Ogun State, Nigeria
- William Kelly, Rydawi Services, Muldersdrift, Johannesburg, South Africa
- Nico Landman, Head of Didactic - SADC+ (EAC), Festo, Isando, Johannesburg, South Africa

- Aluwani Percy Ramabulana, Chairman / Project Leader / Board Member, Dataqwp and Mudzi Energy and Logistics T/A Mudzi Transport Solutions, Johannesburg, South Africa
- Kubeshnie Bhugwandin, Technology Strategy Manager, Eskom
- Dudley Jura , Operations Manager: Coke & Chemicals, ArcelorMittal South Africa, Vanderbijlpark, Gauteng, South Africa

**University Partners**

- Tshwane University of Technology, Pretoria, South Africa
- University of Johannesburg, South Africa
- University of Pretoria, South Africa
- Vaal University of Technology, South Africa
- Center for Advanced Systems Research and Education (CASRE), Tickle College of Engineering, The University of Tennessee, Knoxville
- Lawrence Technological University, Michigan, USA
- University of New Brunswick at Fredericton, Canada

**Sponsors and Corporate Partners**

- DST – Department of Science and Technology, Republic of South Africa
- Gibela-Rail
- Eaton Corporation
- SIEMENS
- EFR Certification

**Organization Partners**

- African Engineering Education Association (AEEA)
- BKSTI: Agency for Cooperation of Higher Education of Industrial Engineering, Indonesia
- Indian Institute of Industrial Engineering (IIIE)
- International Federation of Engineering Education Societies (IFEES)
- Pakistan Society of Industrial Engineering (PSIE)
- Society of Cost and Quality Engineers (SCQE)

Ahmed visited KSU and King Fahd

Nov 26 visited Sheridan College – Prof. Reimer and Dr. Ali visited for Toronto conference preparation meeting

Nov 21 PMP workshop KFUPM

**2018 IEOM African Awards – Pretoria, South Africa - October 30 – November 1, 2018****Distinguished Leadership Award**

- Arthur Mutambara, Former Deputy Prime Minister of Zimbabwe, Visiting Full Professor at the University of Johannesburg
- AAA. Atayero, Ph.D., Vice Chancellor, Covenant University, Ota, Ogun State, Nigeria
- Livhuwani Tommy Makhode, Deputy Director-General: Institutional Planning and Support, Department of Science and Technology, Republic of South Africa

**IEOM Distinguished Academic Award**

- Professor Angina Parekh, Deputy Vice Chancellor: Academic, University of Johannesburg, South Africa and Former Special Advisor on Higher Education to the Minister of Education

**IEOM Distinguished Educator Awards**

- Prof. J Walters, College of Business and Economics, Department of Transport and Supply Chain Management, HOD and Director of the Institute for Transport and Logistics Studies (ITLS) (Africa)
- Dr. Sundaravalli Narayanaswami, Indian Institute of Management, Ahmedabad, India

**IEOM Distinguished Industry Awards**

- Khaya Madiba, Bogie - Subsystem & Maintenance Engineer, Gibela-Rail, South Africa
- Dr. Eugén Ranft, Operations Manager, Eaton Electric (South Africa) (Pty) Ltd, Johannesburg, RSA
- Cobus Oosthuizen, Chief Executive Officer, ESTEQ, Pretoria, Gauteng, South Africa

- Mr. Aluwani Percy Ramabulana, Chairman / Project Leader / Board Member, Dataqvip and Mudzi Energy and Logistics T/A Mudzi Transport Solutions, Johannesburg, South Africa

**IEOM Industry Solutions Awards**

- Natasha Ramkirpal, Production and Process Improvement Specialist, Coca-Cola Beverages South Africa (CCBSA)
- Dudley Jura, Operations Manager: Coke & Chemicals, ArcelorMittal South Africa, Vanderbijlpark, Gauteng, South Africa
- Dimakatso Lesabe, Head: Quality Assurance at City of Cape Town

**IEOM Distinguished Service Awards**

- Prof. Mukondeleli Grace Kanakana, Univ. of South Africa (UNISA)
- Dr. Bolanle Tolulope Abe, Tshwane Univ. of Technology (TUT)
- Prof Charles Mbohwa, Univ. of Johannesburg (UJ)
- Prof. Khumbulani Mpofo, Gibela Research Chair in Manufacturing and Skills Development, Tshwane Univ. of Technology (TUT)
- Prof. John Alfred Trimble, Tshwane Univ. of Technology (TUT)
- Prof. Thomas Tengen, Vaal University of Technology (VUT)
- Prof. Sarma Yadavalli, University of Pretoria (UP)

**IEOM Global Engineering Education Awards**

- Dr. William Msekiwa Goriwondo, Executive Dean, Faculty of Industrial Technology, National University of Science and Technology (NUST), Zimbabwe

**IEOM Woman in Industry and Academia Award**

- Dr. Nita Sukdeo, Full Time Senior Lecturer in Quality and Operations Management, Department of Quality and Operations Management, University of Johannesburg, South Africa

**IEOM Outstanding Teaching Awards**

- John Ikome, Department of Industrial Engineering and Operations Management, Vaal University of Technology (VUT)
- Mosia Ngaka, Department of Mechanical and Industrial Engineering, University of South Africa
- Bontle Tladi, Lecturer of Industrial Engineering Design, University of Witwatersrand

**IEOM Ambassador Awards**

- Prof. Pule Kholopane, Head of Department: Quality and Operations Management, Faculty of Engineering and the Built Environment, University of Johannesburg
- Prof. Clinton Aigbavboa., Vice Dean-Postgraduate Studies, Research and Innovation and Head of Sustainable Human Settlement and Construction Research Centre, University of Johannesburg (UJ)

**IEOM Outstanding Service Awards**

- Tsholofelo Queen Mokolopo, Tshwane University of Technology (TUT)
- Dr. Olufemi Adetunji, Senior Lecturer, Department of Industrial and Systems Engineering, University of Pretoria, Pretoria, South Africa
- Ms. Sebonkile Thaba, Lecturer and Community Engagement Coordinator, Department of Transport and Supply, University of Johannesburg (UJ)
- John Ikome, , Department of Industrial Engineering and Operations Management Vaal University of Technology (VUT)

**IEOM Outstanding Achievement Awards**

- Dr. Anthea Amadi-Echendu, Senior Lecturer, Acting Chair of the Department of Operations Management, University of South Africa
- Paul Agachi, Botswana International University of Science & Technology, Palapye, Botswana
- Bruno Emwanu, School of Mechanical, Industrial and Aeronautical Engineering, University of the Witwatersrand, Johannesburg, South Africa

**IEOM Outstanding Doctoral Dissertation Award**

- Dr. Olasumbo Ayodeji Makinde, Tshwane University of Technology (TUT)

**IEOM Outstanding Student Awards**

- Gabisile Gamede, Department of Industrial Engineering - Tshwane Univ. of Technology (TUT)
- Miss Slindile Mbuyane, Department of Quality and Operations Management, University of Johannesburg, South Africa
- Euodia Vermeulen, Dept. of Industrial and Systems Engineering, University of Pretoria (UP)
- Tshegofatso Gabara, Department of Industrial Engineering and Operations Management - Vaal University of Technology (VUT)

**Undergraduate Student Paper Competition Awards Sponsored by SIEMENS****1<sup>st</sup> Place****ID 209 Time-Dependent Traffic Route Selection for Unsignalized Junctions in Tandem Queueing network**

Anand Jaiswal, Chirag Chandan Mishra and Cherian Samuel, Dept. of Mechanical Engineering, Indian Institute of Technology (IIT), Varanasi, India

**2<sup>nd</sup> Place****ID 088 Gas Chromatography Calibration Curve for Siloxanes Analysis**

Justin K. Mbwebwe, Douw G. Faurie and Molelekoa J. Mosesane, Department of Chemical, Metallurgical and Material Engineering, Tshwane University of Technology, Pretoria, Republic of South Africa

**3<sup>rd</sup> Place****ID 465 Integrated Energy Conversion (IEC) System for Fitness Centres**

Emanuel Zeferino and Boitumelo Ramatsetse, Tshwane University of Technology, South Africa

**Graduate Student Paper Competition Awards sponsored by EATON Corporation****1<sup>st</sup> Place****ID 086 The Study of the Sewerage Disinfection Properties of Moringa Oleifera Leaf Powder**

Douw G. Faurie, Sthen-Karl Boussougou and Molelekoa J. Mosesane, Department of Chemical, Metallurgical and Material Engineering, Tshwane University of Technology, Pretoria, Republic of South Africa

**2<sup>nd</sup> Place****ID 095 Evaluation of Chemical Oxygen Demand (COD) Reduction in Distillery Wastewater Treatment Using the Photocatalysis**

Daphney Hlotse, Thabo Brooms, Molelekoa Mosesane, Department of Chemical, Metallurgical and Materials Engineering, Tshwane University of Technology, Pretoria, South Africa

**3<sup>rd</sup> Place****ID 134 Application of Auxiliary Equipment in Productivity Improvement**

Ngaka Mosia, Mechanical and Industrial Engineering, University of South Africa (Unisa), Florida, Science Campus, Gauteng, South Africa  
Jan Harm Christiaan Pretorius, University of Johannesburg, South Africa

**LEAN SIX SIGMA COMPETITION****ID 204 Implementation of 5S in a Mechanical Workshop at University of Johannesburg: A Case Study**

Valentine Khumalo, Kapil Gupta and Zanele Mpanza, Department of Mechanical and Industrial Engineering Technology, University of Johannesburg, Johannesburg, RSA

**Master Thesis Competition Awards****1<sup>st</sup> Place****ID 253 Characterization of an Auger-Type Pyrolysis Reactor using Induction Heating as an Energy Source**

Daniel Erich Botha, Pyro Carbon Energy (Pty) Ltd, Gaborone, Botswana  
Mmoloki Makoba, Department of Chemical, Materials and Metallurgical Engineering, Faculty of Engineering and Technology, Botswana International University of Science and Technology, Palapye, Botswana

László-Zsolt Szabó, Dept. of Chemical Engineering, Faculty of Chemistry and Chemical Engineering, University of Babeş-Bolyai, Cluj-Napoca, Romania  
Thapelo Shomana, Baboloki Thatayaone Chiwara, Şerban Paul Agachi and Edison Muzenda  
Department of Chemical, Materials and Metallurgical Engineering, Faculty of Engineering and Technology, Botswana International University of Science and Technology, Palapye, Botswana

**2<sup>nd</sup> Place**

**ID 128 Application of Auxiliary Equipment in Productivity Improvement**  
Ngaka Mosia, Unisa, South Africa  
Jan Harm Christiaan Pretorius, University of Johannesburg, South Africa

**Best Poster Awards****1<sup>st</sup> Place**

**ID 191 A Capacitated Clustering Heuristic for Large Datasets**  
Jacoba H. Bührmann and Ian Campbell, School of Mechanical, Industrial and Aeronautical Engineering, University of the Witwatersrand, Johannesburg, RSA  
M. Montaz Ali, School of Computational and Applied Mathematics (CAM), University of the Witwatersrand, Johannesburg, RSA

**2<sup>nd</sup> Place**

**ID 470 Performance Assessment of a Reconfigurable Vibrating Screen Using Finite Element Analysis and Experimental Approach**  
Boitumelo Ramatsetse and Khumbulani Mpofo, Department of Industrial Engineering, Tshwane University of Technology, Pretoria, South Africa

**3<sup>rd</sup> Place**

**ID 155 A Review on Novel Techniques for Iron Recovery from Chalcopyrite (CuFeS<sub>2</sub>)**  
N. Poloko and G. Dahna Department of Chemicals, Materials & Metallurgical Engineering, Botswana International University of Science and Technology, Private Bag 16, Palapye, Botswana

**ID 474 Technological Tools and Application Platform for Successful Development of Reconfigurable Machine Tools**

V. Sibanda, Khumbulani i Mpofo and J. Trimble, Department of Industrial Engineering, Tshwane University of Technology, Pretoria, South Africa

**Best Track Papers Awards****Automation and Agility 136**

**What has Industry 4.0 got to do with us? A review of the Literature**

**Dennit Qewan Adams**

Department of Industrial Engineering  
Masters student at Tshwane University of Technology, Pretoria, South Africa

**Prof. Khumbulani M. Mpofo**

Department of Industrial Engineering  
Tshwane University of Technology, Pretoria, South Africa

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**Ignatio Madanhire, Kumbi Mugwindiri and Stephen Ndlovu**

University of Zimbabwe, Department of Mechanical Engineering,  
P.O Box MP167, Mt Pleasant, Harare, Zimbabwe

**Charles Mbohwa**

University of Johannesburg, Department of Quality Management and Operations Management,  
P. O. Box 524, Auckland Park 2006, South Africa.

**Data Analytics and Big Data 54**

**Time Series forecast of Sea Surface Temperature for Hokkaido fishery ports along coastal line of Japan Sea**

**Chim Chwee WONG**

LKC Faculty of Engineering and Science, Universiti Tunku Abdul Rahman, Kuala Lumpur, Malaysia

**Junichi KISHIGAMI**

Department of Information and Electronic Engineering, Muroran Institute of Technology, Hokkaido, Japan

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**A predictive approach for effective management and planning within the energy sector of South Africa**

**L.K. Tartibu**

Department of Mechanical and Industrial Engineering Technology  
University of Johannesburg, Doornfontein Campus, Johannesburg 2028, South Africa

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**Adenuga Olukorede Tijani, Mpofu Khumbulani and Gabisile Buyiswa Gamede**

Department of Industrial Engineering, Tshwane University of Technology, Pretoria, South Africa

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**Paul Mokilane and Pravesh Debba**

Council for Scientific and Industrial Research, Pretoria, South Africa.  
and School of Statistics and Actuarial Science, University of the Witwatersrand, South Africa

**V.S.S. Yadavalli**

Department of Industrial and Systems Engineering, School of Engineering, University of Pretoria, South Africa

**Caston Sigauke**

University of Venda, University Road, Thohoyandou, Limpopo Department of Statistics Limpopo, South Africa

**Engineering Economy 337**

**Nexus between Human Capital Development and Economic Growth in Nigeria**

**<sup>1</sup>Jesusetemi Oluwafemi, <sup>2</sup>E.T. Akinlabi and <sup>3</sup>Pule Kholopane**

<sup>1,3</sup>Department of Quality and Operations Management, University of Johannesburg, RSA

<sup>2</sup>Dept. of Mechanical Engg. Science, Faculty of Engineering & the Built Environment, University of Johannesburg, APK, RSA

**Afolabi Babatunde**

<sup>4</sup>Economics Department, College of Social and Management Science,  
Afe Babalola University, Ado Ekiti, Nigeria

**Engineering Management 170**

**Exploring the Impact Project Definition Readiness Index on Capital Projects for Coal-Fired Power Station Projects**

**Yolisa Andi Motsepe, Bheki Makhanya and Prof. J.H.C Pretorius**

Post-Graduate School of Engineering Management, Faculty of Engineering and the Built Environment,  
University of Johannesburg, Auckland Park, South Africa



**Environmental Engineering 388****Ground Water Potential Zones Investigation Using Ground Magnetic Survey in South Africa****Ratshiedana P.E, Nwobodo-Anyadiegwu Nkeiruka Eveth, and Kidoge Ibrahimu**Department of Quality and Operations Management  
University of Johannesburg, Johannesburg, South Africa**Healthcare Systems 85****Identifying practices of engagement in innovation platforms: towards understanding innovation platforms in healthcare****Frederick Robert Peter Edlmann**

Department of Industrial Engineering, University of Stellenbosch, South Africa

**Sara S. Grobbelaar**

Department of Industrial Engineering AND DST-NRF Centre of Excellence in Scientometrics and Science, Technology and Innovation Policy (SciSTIP), University of Stellenbosch, South Africa

**Innovation 106****Concomitant of Global Warming and Land Reclamation: Designing a new interface between human kind and sea****Islam Hamdi El-Ghonaimy, and Urban Consultant**Department of Architecture and Interior Design  
College of Engineering - University of Bahrain, Isa Town, Bahrain**Needa Javed**Research assistant Department of Architecture and Interior Design  
College of Engineering - University of Bahrain**Lean 197****Implementation of Lean Manufacturing within the South African Textile Industry****Violet Jacobs and Lungile Nyanga**Department of Industrial and Systems Engineering  
Cape Peninsula University of Technology, Bellville, Cape Town, 7530, South Africa**Transportation and Traffic 209****Time-dependent traffic route selection for unsignalized junctions in tandem queueing network****Anand Jaiswal**

Department of Mechanical Engineering, Indian Institute of Technology (BHU), Varanasi, India

**Chirag Chandan Mishra**

Department of Mechanical Engineering, National Institute of Technology, Warangal, Warangal, Telangana, India

**Cherian Samuel**

Department of Mechanical Engineering, Indian Institute of Technology (BHU), Varanasi, India

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University of the Witwatersrand, Private Bag 3, Wits, 2050

**Gert Heyns**

University of Johannesburg, PO Box 524, Auckland Park, 2006

**Paul Nordengen**

CSIR Built Environment, PO Box 395, Pretoria, 0001

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**Stephen Katlego Letlhake, Goodwell Muyengwa and Yvonie N. Mawane**

Department of Mechanical Engineering and Industrial Engineering Technology  
University of Johannesburg, Johannesburg, South Africa

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**Anastasia Papadouris and George Alex Thopil**

Department of Engineering and Technology Management  
Graduate School of Technology Management, University of Pretoria, Hatfield, South Africa

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**Prof Islam El-Ghonaimy**

Urban Designer and Landscape Architect Consultant  
Department of Architecture, College of Fine Arts, Alexandria University, Egypt.  
Affiliated with Department of Architecture and Interior, College of Engineering,  
University of Bahrain, Bahrain

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**Zakaria Yahia**

Department of Quality and Operations Management  
University of Johannesburg, Johannesburg, South Africa  
(on leave from Department of Mechanical Engineering, Fayoum University, Fayoum, Egypt)

**Pule Kholopane**

Department of Quality and Operations Management  
University of Johannesburg, Johannesburg, South Africa

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A Lagrangian Relaxation Heuristic**

**Gbeminiyi John Oyewole**

Department of Industrial and Systems Engineering,  
University of Pretoria, Pretoria 0002, South Africa

**Olufemi Adetunji**

Department of Industrial and Systems Engineering,  
University of Pretoria, Pretoria 0002, South Africa

**Project Management 202**

**Critical Success Factors (CSFs) of MIDA Compact I Road Transport Project in Ghana**

**Amevi Acakpovi**

Electrical and Electronic Engineering Department  
Accra Technical University, Accra, Ghana

**Abena M. Adutwum**

Open University of Malaysia/ Accra Institute of Technology (AIT),  
Accra-North Accra, P.O.Box: AN19782, Accra, Ghana

**Mathias Bennet Michael**

Electrical and Electronic Engineering Department  
Accra Technical University, Accra, Ghana

**Samuel Blay Amo**

Electrical and Electronic Engineering Department  
Accra Technical University, Accra, Ghana

**Anthony Deku**

Mechanical Engineering Department, Accra Technical University, Accra, Ghana

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**Jolanda Becker and Wynand van Dyk**

Industrial Engineering Department, University of Stellenbosch, Stellenbosch, 7599, South Africa

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**Yvonie N. Mawane and Goodwell Muyengwa**

Department of Mechanical and Industrial Engineering Technology  
University of Johannesburg, Johannesburg, South Africa

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**Sekhwela Moses Mokgala**

School of Mechanical, Industrial and Aeronautical Engineering  
University of the Witwatersrand, Johannesburg, South Africa

**Bruno Emwanu**

School of Mechanical, Industrial and Aeronautical Engineering  
University of the Witwatersrand, Johannesburg, South Africa

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**Gratitude Charis, Gwiranai Danha and Edison Muzenda**

<sup>1</sup>Department of Chemical, Materials and Metallurgical Engineering, College of Engineering and Technology,  
Botswana International University of Science and Technology, Boseja Ward, Private Bag 16 Palapye,  
Botswana.

**Systems Dynamics 268****System dynamics model development for the professional engineers' pipeline****Philisa Mangakane, John Trimble and Mukondeleli Grace Kanakana-Katumba**

Department of Industrial Engineering

Tshwane University of Technology, South Africa, Pretoria

**Total Quality Management 186****An empirical analysis of Total Quality Management and Total Productive Maintenance in Industry 4.0****Guilherme Luz Tortorella, Eduardo Ferreira da Silva and Danieli Braun Vargas**

Department of Production and Systems Engineering

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**IEOM Society International**

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