

2021

PROFILE



MechChem
AFRICA

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INFORMING AFRICAN MANAGERS ON INTEGRATED ENGINEERING SOLUTIONS

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MECHCHEM AFRICA: INTEGRATED, TECHNICAL, SMART AND CONNECTED

MechChem Africa sets out to support African industry in all issues informative and interesting to professionals across the full spectrum of engineering, chemical and mechanical trades.

- *MechChem Africa* adopts an integrated approach to technology solutions, with its content enriched by deliberately seeking out and unpacking technical areas of mechanical and chemical interest.
- Industry-focused, *MechChem Africa* promotes responsible engineering and highlights opportunities for African companies to become more internationally competitive. We promote and value: good design, decision-making and procurement practices; appropriate solutions at lowest lifecycle costs; energy and production efficiency optimisation; environmental responsibility; sustainable development; and smart, modern and innovative technologies and business practices.
- *MechChem Africa* remains a member of the ABC with a print circulation and PDF replica distribution of 6 294 copies as per 2020 Q2 Audit. It is also an online magazine
- *MechChem Africa* adopts a publishing service approach to digital content, through which we offer multiple digital platforms for the dissemination of rich and original content. These include: website and online publishing services; targeted distribution via e-newsletters; social media – Twitter and LinkedIn publication – and we aim to make articles available in multiple formats – HTML, pdf or any other reusable format.

10 REASONS TO ADVERTISE IN MECHCHEM AFRICA

- 1 Specialists in technical communication and unafraid of writing technical articles
- 2 Understanding of engineering and engineers
- 3 High percentage of original content
- 4 Multi-disciplinary content spectrum
- 5 Ability to unpack subtle and complex product differentiators
- 6 Proud supporters of localisation
- 7 Advocates of high quality standards
- 8 Passion for unravelling integrated systems
- 9 Promoters of efficiency improvements and lowest TCOs/LCCs
- 10 Value sustainability and environmental responsibility

FREQUENCY

Every month, *MechChem Africa* is mailed via eNewsletter and pdf replicas to over 11 222 subscribers all over South Africa and Namibia and to a growing readership in other southern African countries.

CERTIFIED CIRCULATION FIGURES



Second quarter 2020 – Total circulation 6 294

ENDORSEMENTS

MechChem Africa is endorsed by:



IChemE

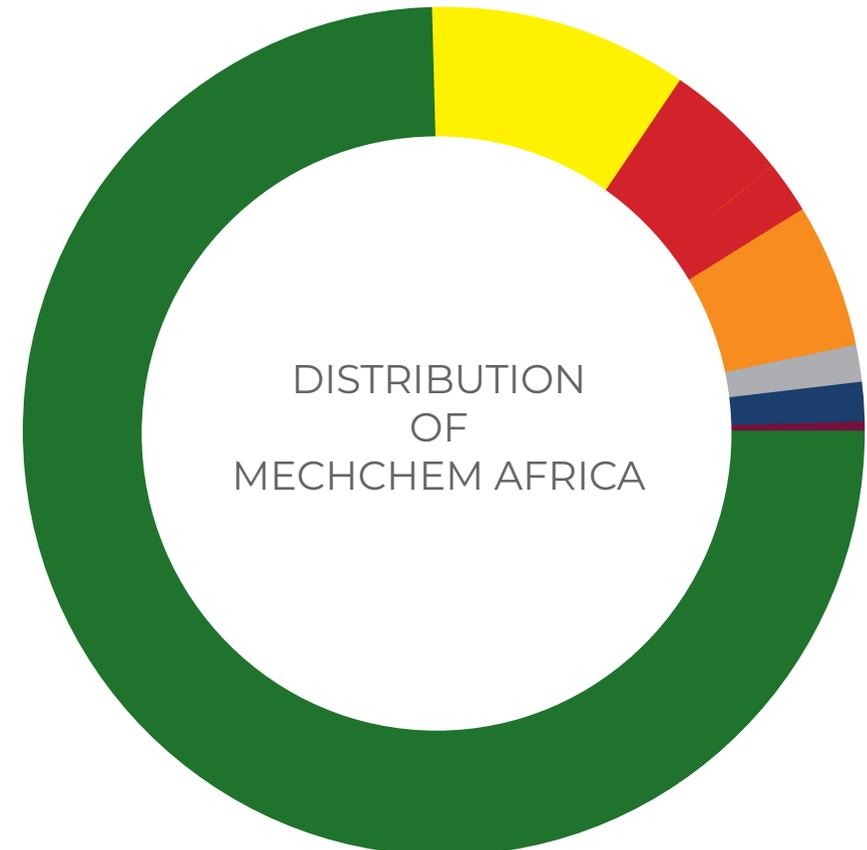
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southern africa business development association



READERSHIP

Every month we email a growing number of PDF replicas into Africa and globally. This counts towards our audited circulation. The magazine is accessible online.

Print readership profile of <i>MechChem Africa</i> based on 6 294 distributed copies	
Industry sector	Percent %
Chemical and mechanical engineers in industry	26.93
Chemical and petrochemical processing	15.47
Associations and training centres	10.92
Product distributors	10.08
Welding and fabrication	9.98
Mining, metallurgy and cement	8.40
Corporate communication	5.08
Municipalities and local government	5.03
Food, beverage and pharmaceuticals	3.20
Water, wastewater and pollution management	2.09
Engineering consultants, designers and contractors	1.70
Power generation	1.11
Totals	100 %



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Online magazine

The online of *MechChem Africa* is available on the Crown Publication website www.crown.co.za or directly at www.mechchemafricamagazine.co.za. The online version of *MechChem Africa* is read by national and international subscribers who do not receive the printed version of the magazine, by subscribers who can't wait for the magazine to arrive or those who want to find particular articles in past issues. Online readers can easily access back issues and, using the search facility, find past articles. For advertisers, hyperlinks to company websites offer a further benefit.

Newsletter

LET'S MAXIMIZE THE OZONE & MINIMIZE THE ENERGY. LET'S SOLVE WATER. WATCO

Mech Chem Africa

Simply part of the solution. **MechChem Africa Sep-Oct 2020**

The F&G Core Product Range: Skies in Automation
Three South African issues of *Automated Safety*, which introduces intelligent solutions to the F&G Core Product Range.

Cogeneration: the smart move for process heat users
Laurie Hogg of Zee Energy argues the case for adding cogeneration to F&G turbine generator systems at plants that already have steam producing steam for process heat.

Good water management for profit and performance
Ajaym Africa's managing director, Vincent Chisali, argues that all business and domestic users should take a proactive, detailed and holistic view to optimise water use and better manage spending resources.

Industry executives, Tim Carter, Thomas van der Merwe and Harry Koenig

Chairman, Dennis Thart

John CEO, Gustav Rabbe

All stories click through to www.mechchemafricamagazine.co.za

Published on multiple platforms

MechChem Africa

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MECHCHEM AFRICA (MCA) BIMONTHLY FEATURES FOR 2021

To be published as a bimonthly magazine with six issues per year, *MechChem Africa* covers a very broad range of technical topics and fields. To cater for this diversity, mechanical and chemical engineering topics are clustered into features, which will be dealt with as two alternating sets of content as outlined below:

Feature Summaries:

* Jan-Feb, May-Jun, Sep-Oct

- Minerals processing and materials handling
- Power generation, Petro-chemical technology, renewable energy and energy management
- Maintenance solutions and asset management
- Water and wastewater solutions
- Heating, ventilation and air conditioning (HVAC)
- Corrosion control and coatings
- Local manufacturing and food processing
- Product & industry news
- Innovative engineering

* Mar-Apr, Jul-Aug, Nov-Dec

- Minerals processing and materials handling
- Power generation, Petro-chemical technology, renewable energy and energy management
- Pump systems, pipes valves and seals
- Power transmission, bearings, bushes and seals
- Hydraulic and pneumatic systems, pumps and compressors
- Automation, process control and CAE
- Environmental management and cleaning technologies
- Products & industry news
- Innovative engineering

Minerals processing and materials handling; PowerGen & PetroChem; and Innovative engineering will be covered in every issue, as will Product and industry news. In addition, to accommodate breaking industry/engineering stories that don't fit comfortably into an issue's features, we will be reintroducing the Special report feature on an ad-hoc basis.

The outside front cover and cover story

MCA's front cover is an opportunity for a company to sponsor a product, development, success or any aspect of its offering. A unique company branded image is used on the front cover for each issue of the magazine. The cover sponsor is also entitled to a double-page spread (DPS) cover story about its offering or products, which can either be supplied or written by MCA's editor.

Feature Briefs:

Minerals processing and materials handling (featured in every issue)

This feature combines two of the largest technology areas associated with the mining industry.

Minerals processing involves techniques associated with beneficiating raw materials: chemical manufacturing and treatment processes; mill circuit processing and treatment, separation, flotation and leaching baths, electrowinning/electroextraction, etc. Metallurgy, foundry processing and steelmaking, polymer processing and future material trends are covered; as are plastics, rubber and composites; polymeric materials, coatings, chemicals, nylons, fabrics, printing, purification, separation, fibre reinforcing, fibre glassing, material properties and coatings.

From the materials handling perspective, the feature focuses on



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the equipment and solutions for handling bulk materials as well as for screening, lining, conveying, sorting and separating. Some topics covered include: bulk materials handling equipment (stackers, reclaimers, train and ship loaders and unloaders); belt conveyor systems and apron feeders; crushers and screens; sampling and weighing solutions; pneumatic conveying; overhead gantries; earthmoving equipment, wheeled and tracked loaders. Factory, warehousing and logistics handling solutions are also included.

PowerGen & PetroChem (featured in every issue)

This feature is an energy related feature that deals with the efficient generation and use of electricity, fossil fuels such as petroleum, renewable fuels such as hydrogen, and the production of chemicals.

Fear of global warming is driving the energy sector towards increased efficiency, lower emissions and more cost-effective renewable solutions. These are all associated with more complex and interesting technologies. *MechChem Africa* supports the drive towards cleaner technologies, but understands that these must remain cost-effective and sustainable in the long term.

This feature deals with the important field of energy efficiency engineering: demand side management (DSM), reducing peak demand, load-shaping and energy efficiency initiatives; distributed energy generation, net metering and feed-in technologies; efficient and renewable power generation, coal-fired and nuclear power stations, steam and gas turbines, generator technology, power plant automation systems, concentrated solar power, photovoltaic systems, wind turbines, sterling engines, hybrid systems, fuel cell technology, diesel generators and alternative fuel.

Also included is the petrochemical industry and its transformation to cleaner production. With the development of synthetic fuel production processes such as Sasol Synfuels' CTL coal liquefaction process, the petrochemical industry has become a flagship industry in South Africa. Oil and gas finds in both East and West Africa and shale gas exploration in the Karoo are likely to lead to significant growth of the industry.

Biofuel production facilities and waste-to-gas plants are also emerging to reduce our dependence on non-renewable energy sources. As well as dealing with the technologies for distilling, refining and blending different fuels, this feature will look at the extended chemical and petrochemical industry offering, including plastics, fertilisers, lubricating oils and waxes.

Maintenance solutions and asset management

There is an increasing drive towards maximising productivity from equipment, extending its life and minimising energy use.

The end goal is to maximise operational efficiency and uptime while minimising costs of ownership over the lifetime of an investment.

To achieve this, however, modern and improved maintenance and asset management practices are imperative, from equipment design and commissioning to end-of-life decommissioning. This feature highlights this increasingly important field.

Topics include: the value of connectivity, Industry 4.0 and the IIoT in modern maintenance; reliability engineering; condition monitoring and asset management; lubrication and contamination management; tribology, lubricants, lubrication systems, industrial oil solutions and oil quality; quality management and monitoring; corrosion/ thickness testing; remote diagnostics; environmental management systems; and inspection skills training.

Water and wastewater solutions

Water is now a scarce resource, particularly in South Africa where rising population levels and recent droughts have raised concerns that some areas of the country are likely to 'run dry'.

In addition, acid mine drainage (AMD), raised salination levels of our river water as well as contamination of water resources via leaching from mine pond waters and slurry dams are ongoing problems.

This feature aims to highlight the technical solutions available for water and wastewater treatment for both municipal supplies and industrial wastewater. Topics include: Water and wastewater treatment solutions; filtration, UV-disinfection, seawater desalination via reverse osmosis (RO) and nanofiltration (NF); ion exchange water filtration; mine wastewater



and acid mine drainage treatment plants; water recycling; pollution mitigation; food grade purification systems, testing and monitoring solutions, recycling and conservation are also highlighted.

Heating, ventilation and air conditioning (HVAC)

Combined, HVAC comprises some of the world's most energy-intensive applications. This feature focuses on future energy-efficient solutions that reduce the cost and reliability of heating, cooling and ventilation technologies.

Increasingly, this also includes renewable solutions such as concentrating solar power, combined cooling and heating (CCH) and tri-generation (CCHP).

Corrosion control and coatings

Appropriate corrosion control leads to better reliability and longer life, protecting metal components from degradation because of moisture, salt spray, oxidation or exposure to a variety of environmental or industrial chemicals. This feature deals with the anti-corrosion coatings that act as barriers between attacking agents and structural materials and the treatment and corrosion protection techniques employed to minimise corrosion damage.

Local manufacturing and food processing

High quality manufacturing machinery and processes are essential for any African country, including South Africa, wanting to be globally competitive, which is key to economic growth and prosperity. This feature focuses on successful manufacturing solutions and experiences with a view to fostering localisation.

Also of rising significance across Africa are the Food and Beverage industries, which are increasingly localised and require the highest levels of contamination control from the processing equipment used.

Topics covered include: process control equipment and monitoring, plant software and sensors, production management and plant efficiency, local manufacturing success stories and processes, NC-machines, lathes, milling machines, boring machines, bending, forming, pressing, stamping and cutting processes and machinery, plasma and laser cutting equipment and joining techniques and all of the food grade equivalent components and systems necessary for successful and save food and beverage processing.

Pump systems, pipes, valves and seals

Pumping systems are intensive energy consumers and the modern trend is to optimise pumping efficiency in every way possible. Mining, slurry and dewatering pumps dominate the industry, but water and wastewater are also becoming critically important. From the chemical

perspective, safe pumps are a vital component of all chemical, petrochemical, chemical and food-grade transfer systems and these all require fit-for-purpose materials, coatings liners and seals.

Power transmission, bearings bushes and seals

We interpret power transmission in the wider sense, meaning we include the prime movers such as engines, electric and hydraulic motors; as well as gearboxes, geared motors and reducers. We also see variable speed or variable frequency motor drives (VSDs and VFDs) as integral components of modern transmission systems.

Bearings remain the most critical rotating shaft component, along with other drive train essentials, such as hubs, bushes, couplings (including fluid couplings), universal joints and taper locks. Sealing solutions, lubrication systems and contamination control solutions are also covered.

Hydraulic and pneumatic systems, pumps and compressors

This feature supports companies that specialise in developing systems and manufacturing, supplying and supporting hydraulic and pneumatic equipment for applications such as automating the water industry (via valve actuators); industrial presses; mobile equipment; hydraulic drives and motors; and pneumatic handling systems.

Hydraulic pumps, motors and actuators, valves and control systems, manifold blocks as well as oil and oil-free air compressors, pneumatic motors and actuators, valves and pneumatic control systems, dehumidification and cooling are featured.

Automation, process control and CAE

With the rise of Industry 4.0 and the Industrial Internet of Things (IIoT), this feature aims to promote appropriate automation for productivity and quality improvements via the use of robotics and custom-designed automation systems. The feature also embraces the integrated nature of mechanical systems with electronics and IT-based sensing and control systems.

Instrumentation and process monitoring and control of mass flow, pressure, temperature, composition and more, are critical for the control and automation of reactions employed at chemical process plants and laboratories. The reliability and control precision govern the operational efficiency of the plant or process.

From a CAE perspective, IT now embraces almost every aspect of engineering, including: solid and 3D modelling, digital or virtual prototyping, digital twinning, engineering analysis, digital simulation, finite element analysis (FEA) and computational flow dynamics (CFD);

chemical process flow simulation; pipe and piping design; computer-aided manufacturing (CAM), injection mould design, rapid prototyping, numerical control (NC) simulation and verification; case studies in engineering, design for manufacturing; EPC-tools, plant and product lifecycle management (PLM) and product data management.

IT tools for energy efficiency and proactive maintenance also feature.

Environmental management and cleaning technologies

Disposing of waste in a way that does not impact on the environment is an imperative for the planet and a legal requirement for industry. Recycling of waste streams has also now moved from being a chore to an income-generating opportunity. This feature aims to promote the circular economy, recycling, reusing and remanufacturing technologies and best practice waste management solutions: pollution control, emissions scrubbing; treatment and disposal of effluents; sorting, shredding and recycling solid waste; and waste-to-fuel services and plant.

Products & industry news

A collection of short industry news items in support of advertisers and industry. This is an opportunity for companies and advertisers to promote new engineering products, components or service offerings via short articles, photographs and cost-effective, associated advertising.

Innovative engineering

Innovative engineering is an editor's choice feature that strives to bring noteworthy innovations and modern technology developments to the attention of MCA's readers in Africa.

Special report

This is a placeholder for exciting developments in industry; special events, launches or notable success stories.

Back page

A short future-technology article and/or an upcoming event of particular interest.

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