

## Engineering Keeps The World Working.

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### 1. South African Forum for Engineering.

COET is a member of SAFE. This Forum is a non-profit voluntary, non-statutory Engineering body with a membership consisting of Voluntary Associations, Learned Societies, Academic Institutions and Industry Associations. It should be noted that no other such non-statutory body exists representing the engineering disciplines, and that the interests of all parties are not effectively represented by any statutory body which will inherently be in a position of conflicting interests when dealing with any matters, which from time to time may be deemed to be contentious between the private and public sectors as they relate to the Engineering Profession.

Some 17 Voluntary Engineering Associations have been meeting over the past year and have signed a Memorandum of Understanding in order to collaborate on common issues.

*SAFE recently sent a petition to the President of South Africa requesting intervention in saving the Construction industry. It seems nothing will happen until after the elections. The country's declining infrastructure and cancellation of projects due to violence and lawlessness is an area of great concern.*

With the latest Company Group 5 going for business rescue it is estimated that this has resulted in over 8 000 jobs lost in the past year alone. It joins the other giants such as Basil Read and Esor who have folded in the past year. For a country that is shedding jobs and a negative economy that is growing below its own population growth, the closure of any industry should be lamented.

### 2. The Court Case Against ECSA – Update.

ECSA was approached some years back on what seems to have been a flawed process of appointment of individuals onto ECSA's then new council which may render the new council illegal. This was a concern raised by various Voluntary Associations (VA) as it impacts on the validity of the work of ECSA's committees and the VA's.

Due process was followed after ECSA did not respond to the concern and the matter was taken to the Council for the Built Environment (CBE) for investigation. Legal advice indicated that there is sufficient evidence that the process was flawed. This concurs with the legal finding of the CBE.

Before going to court these individuals followed all available processes to resolve the matter amicably and in a collaborative manner with ECSA.

ECSA and the CBE were approached, then the Minister of Public Works. The team met with the Minister, deputy minister, the DG and their advisors. The Minister and his deputy both confirmed that they were not aware of the details of the issues regarding the ECSA case apparently promised to get back to the VA's. It's been more than two years since this meeting was held and the team has not received any response.

Due to no response from these bodies, the only option available was to go to court. Some 16 Voluntary Associations are indirectly part of this litigation process. Papers were lodged in high court in October 2016.

The court date for this case has not yet been finalised as far as we are aware.

During the past few months ECSA has indicated that it may be willing to discuss this matter, but at the time of writing no positive steps have been agreed on.

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### 3. The South African Schools Initiative

COET supports the South African Schools Initiative - Khan Academy

The link to the presentation on the Khan Academy is below

<https://youtu.be/nTFEUsudhfs>

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### 4. NSTF NEWS.

**Finalists announced:**

**2018/2019 NSTF-South32 Awards**

**Recognising excellence and outstanding contributions to science, engineering and technology and innovation in South Africa #NSTFawards2019**

COET is a member of The National Science and Technology Forum (NSTF) and the NSTF is pleased to announce the group of finalists contending for the prestigious NSTF – South32 Awards. This is the 21st year of the annual NSTF-South32 Awards.

**The NSTF-South32 Awards:** The NSTF Awards were established in 1998 as a collaborative effort to recognise outstanding contributions to science, engineering and technology (SET) and innovation by SET-related professionals and organisations in South Africa. This includes experienced scientists, engineers, innovators, science communicators, engineering capacity builders, and organisational managers/leaders, as well as data and research managers.

*For further details Visit Website at*

[www.nstf.org.za](http://www.nstf.org.za).

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### 5. CPD News.



Two CPD courses for LMI,'s were held in Jet Park recently.

On the 06-05-2019 for the Mobile crane course a total of 28 persons attended.

On the 07-05-2019 for the Counterbalance Forklift Course a total of 31

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*Skills such as communication, learning, attitude and emotional intelligence have also become important, according to economist Mike Schüssler*

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## 6. Adverts of interest to members.

### Get digital now with the Festo Automation Expo 2019!

Festo invites you to maximise your competitiveness in the industry. We are offering a course on an 'Introduction to Industry 4.0: Core elements and business opportunities'. This course appeals to management level, senior executives, technology enthusiasts and engineering professionals. Attending this half-day accredited course will earn you **0.5 CPD points**. The second half of the day will also include a seminar from four of our industry specialists.

The half-day morning session (CPD course) costs R1750.00.

The half-day afternoon session (seminar and function) costs R1250.00.

The full day session (CPD course, seminar and function) costs R2500.00.

A 5% discount will be given to customers that will be paying for the full day session, making the total R2375.00.

#### **Dates and venues for the Automation Expo:**

Gauteng: 6<sup>th</sup> June 2019 – Sandton Convention Centre

Eastern Cape: 4<sup>th</sup> July 2019 – Boardwalk Convention Centre

Western Cape: 19<sup>th</sup> July 2019 – Spier Wine Estate

KwaZulu Natal: 15<sup>th</sup> August 2019 – Durban ICC

Kindly direct all your enquiries to [events.za@festo.com](mailto:events.za@festo.com).

Click on this link to RSVP and secure your spot [www.festo.co.za/expo2019!](http://www.festo.co.za/expo2019!)

*If links don't work please type in the text into your internet browser.*

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## The Mechanical Designer's Handbook for Projects in South Africa 1<sup>st</sup> Edition

Price (including delivery in the RSA) R675

Order directly from Author:

Email: [vdmtek@gmail.com](mailto:vdmtek@gmail.com)

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Author	A.J. van der Merwe (Pr Tech Eng)
Format	Book – A4 Paperback / Softback
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Editor	C.W.R. Oertel
Edition	1 <sup>st</sup>
Date of Publishing	1 May 2018
Pages	195
Language	English

This handbook is specifically written for technologists, designers and drafting technicians in the engineering project environment in Southern Africa. It is also a useful reference to students in mechanical and structural engineering.

The text introduces the reader to design office management, layout drawings from flow sheets and P&IDs, the understanding of survey drawings, basic structural design of steelwork to SANS 10162, machine design, belt conveyor design to international standard ISO 5048 and fluid design, including pump selection. Fifty two step by step examples simulate typical situations in practice and guide the reader to quick and accurate solutions. After more than 25 years in the design and project management environment, the author based the contents of this handbook on practical "hands on" experiences and gladly shares this knowledge with upcoming professionals.

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## 7. Good to Know.

#. *Services Offered By Members.*

(Free ad for members)

Please visit our Website

<http://engineersdirectory.co.za/>

For all details.

**Wherever possible support your fellow members!**

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## # A LinkedIn Interest Group for LMI's.

The group is formed under the heading,

The Chamber of Engineering Technology

<https://www.linkedin.com/groups/13690667/>

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*Every engineer does not have to invent his own wheel  
he needs to put shoulder to the wheel and keep it rolling . . . .*

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## 8. **Snippets.**

*The following mini articles, notices and news follow the trend of interesting scientific, engineering developments and general interest items that we come across. Read and enjoy!*

*Please feel free to contribute by sending your items to share with our members!*

*Ed*

## # **Scientists turn carbon dioxide back into coal?!**

Scientists have harnessed liquid metals to turn carbon dioxide back into solid coal, in research that offers an alternative pathway for safely and permanently removing the greenhouse gas from our atmosphere. The new technique can convert CO<sub>2</sub> back into carbon at room temperature, a process that's efficient and scalable. A side benefit is that the carbon can hold electrical charge, becoming a supercapacitor, so it could potentially be used as a component in future vehicles.

The research team led by RMIT University in Melbourne, Australia, have developed a new technique that can efficiently convert CO<sub>2</sub> from a gas into solid particles of carbon.

Published in the journal Nature Communications, the research offers an alternative pathway for safely and permanently removing the greenhouse gas from our atmosphere.

"While more research needs to be done, it's a crucial first step to delivering solid storage of carbon."

The research was conducted at RMIT's MicroNano Research Facility and the RMIT Microscopy and Microanalysis Facility, with lead investigator, Honorary RMIT and ARC Laureate Fellow, Professor Kourosh Kalantar-Zadeh (now UNSW).

The research is supported by the Australian Research Council Centre for Future Low-Energy Electronics Technologies (FLEET) and the ARC Centre of Excellence for Electromaterials Science (ACES).

The collaboration involved researchers from Germany (University of Munster), China (Nanjing University of Aeronautics and Astronautics), the US (North Carolina State University) and Australia (UNSW, University of Wollongong, Monash University, QUT).

*(Ed; Wow – watch this development)!!*

## # **Scientists have made a next-generation plastic that can be recycled again and again into new materials of any color, shape, or form**

Researchers have designed a recyclable plastic that can be disassembled into its constituent parts at the molecular level, and then reassembled into a different shape, texture, and color again and again without loss of performance or quality.

A team of researchers at the U.S. Department of Energy's (DOE) Lawrence Berkeley National Laboratory (Berkeley Lab) has designed a recyclable plastic that, like a Lego playset, can be disassembled into its constituent parts at the molecular level, and then reassembled into a different shape, texture, and color again and again without loss of performance or quality. The new material, called poly(diketoenamine), or PDK, was reported in the journal *Nature Chemistry*.

The researchers next plan to develop PDK plastics with a wide range of thermal and mechanical properties for applications as diverse as textiles, 3D printing, and foams. In addition, they are looking to expand the formulations by incorporating plant-based materials and other sustainable sources.

Source:

DOE/Lawrence Berkeley National Laboratory

Journal Reference:

1. Peter R. Christensen, Angélique M. Scheuermann, Kathryn E. Loeffler, Brett A. Helms. **Closed-loop recycling of plastics enabled by dynamic covalent diketoenamine bonds.** *Nature Chemistry*, 2019; 11 (5): 442 DOI: 10.1038/s41557-019-0249-2

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## # **No More Plastic Shopping Bags. (Pollution to diminish)!**

The Real Estate Investment Trust (Reit) Liberty Two Degrees (L2D) have announced a “no plastic shopping bags” policy at its portfolio of malls from January 2020. It has set itself a zero sustain target by 2030 which will see a reduction in water and energy use along other measures. It will introduce community based plastic free bags to its centres. These centres include Sandton City, Eastgate Complex, Nelson Mandela Square, Liberty Midlands (KZN), Liberty Promenade Mitchells Plain (West Cape) and some others.

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## # ***Viable, environmentally-friendly alternative to Styrofoam***

Washington State University researchers have developed an environmentally-friendly, plant-based material that for the first time works better than Styrofoam for insulation.

The foam is mostly made from nanocrystals of cellulose which is the most abundant plant material on earth. The researchers also developed an environmentally friendly and simple manufacturing process to make the foam, using water as a solvent instead of other harmful solvents.

Researchers have been working to develop an environmentally friendly replacement for polystyrene foam, or Styrofoam for years. Styrofoam, is made from petroleum and is used in everything from coffee cups to materials for building and construction, transportation, and packaging industries. It is made from toxic ingredients and depends on petroleum and doesn't degrade naturally, and creates pollution when it burns.

While other researchers have created other cellulose-based foams, the plant-based versions haven't performed as well as Styrofoam. They are not as strong, don't insulate as well, and degraded at higher temperatures and in humidity.

In their work, the WSU team created a material that is made of about 75 percent cellulose nanocrystals from wood pulp. For the first time, the researchers report, the plant-based material surpassed the insulation capabilities of Styrofoam. It is also very lightweight and can support up to 200 times its weight without changing shape. It degrades well, and burning it doesn't produce polluting ash.

The researchers are now developing formulations for stronger and more durable materials for practical applications. They are interested in incorporating low-cost feedstocks to make a commercially viable product and considering how to move from laboratory to a real-world manufacturing scale.

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Story Source:

Washington State University.

The work, led by Amir Ameli, assistant professor in the School of Mechanical and Materials Engineering, and Xiao Zhang, associate professor in the Gene and Linda School of Chemical Engineering and Bioengineering, is published in the journal *Carbohydrate Polymers*.

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## # **Science Fiction comes true!**

The video is rather dark but extremely interesting. Most TED videos are!!

A breakthrough device that combines mind and machine (Arnav Kapur | TED2019)

[https://www.ted.com/talks/arnav\\_kapur\\_a\\_breakthrough\\_device\\_that\\_combines\\_mind\\_and\\_machine?utm\\_source=tedcom\\_share&utm\\_medium=email&utm\\_campaign=tedsread](https://www.ted.com/talks/arnav_kapur_a_breakthrough_device_that_combines_mind_and_machine?utm_source=tedcom_share&utm_medium=email&utm_campaign=tedsread)

# **SpaceX Successfully launched the first 60 Starlink Satellites.**

This could be a game changer for the world!

In a world dominated by collectives and group thinking it shows that one individual can make a difference!

See ; <https://www.theverge.com/2019/5/15/18624630/spacex-elon-musk-starlink-internet-satellites-falcon-9-rocket-launch-live>

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**No 9. The Joke Column.**

**Warning / Disclaimer.**

*Sensitive readers are warned that the following may erroneously be taken to contain sex, violence, strong language, gender, race, ethics etc. Readers are warned not to read or have any of the following read to them. Recommended readers age is limited to 140 and 161 years of age. A further requirement is you must have a sense of humour. No Persons or animals are intended to be harmed in any way by this column.*

# "Being British is about driving a German car to an Irish pub for a Belgian beer, then going home, grabbing an Indian curry or a Turkish kebab on the way, to sit on Swedish furniture and watch American and Australian shows on a Japanese or Korean TV, which will soon be powered by a Chinese power station."

And the most British thing of all? "Suspicion of anything foreign."  
And arguing about Brexit!!

# Britain has Brexit  
South Africa has BrokeIT!!  
Is this because SA is CrookIT?  
Let's see if the Government can FixIT!!

# The first computer dates back to Adam and Eve. It was an Apple with limited memory, just one byte. And then everything crashed.

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**Part 10.**

**Unsubscribe Option.**

As a member of COET you should want to receive the E News. If however u do not want to receive the COET E News as an E Mail then you have the option to unsubscribe.

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**Part11.**

**O. & O. E.**

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