

SAIT Newsletter, March 2020

Tribology is easily impacted at a very basic level.

For example, the forecourt in a petrol/diesel filling station is where it begins. Pump jockeys are trained to also include attention to 'oil-water-tyres' without any thought given to the condition under which these friction-engaging items are being checked:



- **Oil:** Hot oil takes time to drain down from the cylinder head galleys in an engine – sometimes as much as 30 minutes is required. This is where over-filling from incorrect dipstick readings starts to occur with all the evils that excessive lubricant causes in the long term, including the possibility of seal failures.
- **Water:** Modern engines do not use 100% water to cool an engine – specialised coolant is mixed in a 50:50 ratio with water. Topping up with 100% water dilutes the coolant and reduces the longevity benefits that coolant in the correct ratio brings to engine efficiency.
- **Tyres:** A hot tyre off a hot summer road can gain as much as 20% in pressure. Bleeding air off a hot tyre to bring this back to a cold pressure reading increases rolling resistance, fuel consumption and tyre wear – it's all about friction and heat. Tyres must be pressure-checked when cold.

SAIT Training

Follow the path from data to information and into knowledge.

Lubrication Engineering Courses

Please Note: as from January 2020, SAIMM is allocating 4 CPD Credits to each of the SAIT 5-day Lubrication Engineering Courses.

Report-back: Lubrication Engineering 125

The SAIT's 5-day course, Lubrication Engineering 125, was held at CedarWoods of Sandton Conference Centre. The course was attended by 18 delegates from various locations in South Africa, Zambia and Tanzania. As usual, the exam was written on the final day of the course, 28 February. At date of publication the results are not yet available.

Lecturers were: David Beard of the SAIT and CJP Chemicals; Dave Gamble, of the SAIT; John Fitton of ONFO; Faiz Regal of the SAIT and Astron Energy; and Patrick Swan of the SAIT and Aswan Consulting.



Delegates at Lubrication Engineering 125, with Lecturers Dave Gamble and Patrick Swan, SAIT President Doug Herschell, with Gill and Berice from the SAIT Office.

Lubrication Engineering Courses – Remaining 2020 Schedule

Register now to ensure your place on these courses. There is still space available.

Each course is registered with ECSA and allocated an SAIMM number, and is awarded four CPD credits.

Registration closes a week before the starting date of each course; please book early to ensure your position.

Please note that group photographs are taken and published.

Costs: SAIT Members: R17 135 Non-Members: R19 090 Students: R5 267

- **LE 126:** 25 to 29 May 2020, Johannesburg
- **LE 127:** 8 to 12 June 2020, Durban
- **LE 128:** 27 to 31 July 2020, Johannesburg
- **LE 129:** 24 – 28 August 2020, Cape Town
- **LE 130:** 19 to 23 October 2020, Johannesburg.

For full details and to download Lubrication Engineering Registration Forms, go to [SAIT: Training](#).

The STLE's CLS, OMA and CMFS Examinations at SAIT Hosted by The SAIT in 2020:



Society of Tribologists and Lubrication Engineers



The South African Institute of Tribology will host the STLE's CLS, OMA I and OMA II and CMFS examinations on **20 November 2020**. The venue will be Science Park, Kelvin.

- **Certified Lubrication Specialist (CLS):** Although not compulsory, it is highly recommended that you first attend the SAIT five-day 'Lubrication Engineering' course. A distinction of 75% is a good indication of success in the CLS exam, where the standard is high and the pass mark is 70%. The recommended books for the CLS exam are the STLE Alberta Section 'Basic Handbook of Lubrication' Third Edition, and/or the AIST 'The Lubrication Engineers Manual' Fourth Edition.
- **Oil Monitoring Analyst (OMA I and OMA II)**
- **Certified Metalworking Fluids Specialist (CMFS)**

A significant amount of study is required for these exams, so it is advisable that candidates make an early start. Recommended reading for all modules is on the [STLE website](#) under "Professional Development".

For further information, costs and to register, please contact Gill, Isabel or Berice at the SAIT offices:

Tel. (+27) (0)11 804 3710 or email secretary@sait.org.za or admin@sait.org.za.

SAIT Events

Technical Meetings

Report-back on the SAIT Technical Meeting, 3 March 2020

“Challenges at the Railway Wheel-Rail Interface related to Friction, Lubrication, Wear & Friction-Induced Noise”



The Technical Meeting on Tuesday 3 March was well attended by over 40 attendees - members, guests and students.

Dr Danie Fourie gave an excellent presentation, and was delighted to field and answer an unprecedented number of questions during the Q & A session from his attentive audience.

Danie's presentation will be published as the SAIT's editorial in the March/April edition of the SA Mechanical Engineer.

Technical Meetings are being arranged for **7 April 2020** and **5 May 2020** after the AGM. When details have been finalized, you will find the information at [SAIT Technical Meetings](#).

Local Events

Please Diarise Now – **Local is Good** and Needs Your Support

- **The 36th SAIT Annual General Meeting** will be held on **Tuesday evening 5 May 2020** at Science Park, 1 Northway, Kelvin, Sandton. Paid-up members are urged to attend. Further details will be made available when finalised.
- **The SAIT's 2020 Annual Awards Dinner** will be held on **Friday evening 15 May 2020** at Cedarwoods of Sandton. Members and their guests are welcome. Further details and a booking form will be made available when finalised.
- **CBM CONNECT** – Johannesburg, South Africa **10-12 March 2020 Radisson Blu Gautrain Hotel**. This conference is South Africa's best and only conference that is 100% for and about the machine condition monitoring industry. The conference covers a broad range of technologies and sub-industries that revolve around keeping machinery in working condition – please visit <https://thebcmconference.com/sa2020/> It's also the first of its kind to be held in Africa.

International Events

For a list of upcoming international events please visit [Tribonet Conferences](#) where links take you to each event in full detail.

- **19 – 22 April 2020:** [2nd Korea-Tribology International Symposium](#)
- **27 – 29 April 2020:** [3rd African Conference in Tribology](#)

- **03 – 7 May 2020:** [75th STLE Annual Meeting & Exhibition](#)
- **04 – 5 May 2020:** [4th International Conference on Materials Science and Engineering](#)
- **13 – 15 May 2020:** [Contact Mechanics International Symposium 2020](#)
- **Tuesday 8 – Thursday 10 September 2020:** [47th Leeds-Lyon Symposium on Tribology for a Sustainable Future University of Leeds, Leeds, UK.](#)

Sunday 5 – Friday 10 September, 2021 – SAVE THE DATE! It is a great pleasure to invite you to join the **7th World Tribology congress (WTC 2021)** to be held in **Lyon, France September 5-10, 2021.**

WTC 2021 aims to highlight recent important progresses in all aspects of Tribology, to strengthen the links between academy and industry, to provide a unique opportunity for discussion concerning the latest developments in Tribology and to promote international collaborations and exchanges. The Congress will consist in **scientific sessions, keynote talks** and **symposia** on topics at the cutting edge of various aspects of Tribology, a wide **exhibition** and additional events – scientific and non-scientific.

We look forward to welcome you at WTC 2021!

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Phillipe VERGNE and Philippe KAPSA are the General Chairs.

Abstract submission: Opens March 2020

Early-Bird Registration: Opens September 2020

Website: www.wtc2021.org

- For further information, feel free to contact us at: General Information – contact@wtc2021.org or Sponsorship & Exhibition – sponsor@wtc2021.org.

Contamination Corner

Moisture in lubricating oils can have a devastating impact on component lifecycles. According to a major bearing supplier, it is possible to shorten the life of rolling element bearings by as much as 75 percent without ever knowing that moisture is in the oil, based on visual observation.



- Water causes oxidation, acid formation, varnishing, sludging, foaming, viscosity problems (water first thickens and then thins the oil) and can cause an oil to become conductive. Water also creates conditions for corrosion to dramatically increase.

- Water can be driven off oil by maintaining the right temperature, and by using absorbent media filters and vacuum dehydration. Industrial equipment that is frequently turned on and off is most susceptible to moisture from the atmosphere, particularly during the summer months when atmospheric moisture is at its peak.

Ref: [Noria - The Effects of Water Contamination](#)

Did You Know...

...that The SAIT and SA Mechanical Engineer Magazine, published by Promech, are planning a SAIT Supplement to go out with SA Mechanical Engineer's April 2020 edition.

We invite all our Corporate Members and any SAIT Member running a small business to participate in this exciting promotion of the very important aspect of engineering – Tribology – and the South African Institute of Tribology.

SA Mechanical Engineer is offering SAIT Members an information block in the April SAIT supplement, which could include your company logo and activities for only R2,000.00. Content can be discussed in detail with Louise Cresswell, Key Account Manager of Promech Publishing CC and specifically of SA Mechanical Engineer; she can be contacted at Tel : 011 781-1401 or Email : samecheng@promech.co.za. The website can be reached at [SA Mechanical Engineer](#)



Parting shot

“Modern grease is much more than just grease” says Patrick Swan, SAIT Past President, and adds: “The most well-known property of grease is its consistency or hardness, classified as the NLGI (National Lubricating Grease Institute) consistency number, ranging from NLGI 000 to NLGI 6. NLGI is fluid and NLGI 6 is a block of grease.”

Swan continues – “Most greases today are in the NLGI 1 and 2 range, considered ideal for pumpability and reduced friction while still able to hold its position in a mechanism. Crudely, consistency is only a measure of how much thickener is in the grease and has no correlation with its overall performance or suitability for a particular application.”

And here's Swan's punchline: “As when selecting any lubricant, write down the actual requirements for your application, such as water resistance, rust and oxidation protection, extreme pressure or load-carrying properties, sealing requirements, viscosity rating and method of application. Only then ensure whatever grease is chosen fully meets those requirements.” Swan concludes – “**A final word of warning: do not mix grease of different types**”. Ref *The SA Mechanical Engineer Vol 56 May 2006*.



We Want to Hear from YOU!

1. Please let us know what topics are of interest to you, or submit interesting articles that we can share with the SAIT community. This will assist in disseminating information to all involved in Tribology. Please send your thoughts to admin@sait.org.za for forwarding to The Editor.
2. Please also let us know what would interest you for technical sessions / webinars – or any interesting presenters from whom you would like to hear.

We look forward to hearing from you!

Please Like the South African Institute of Tribology – SAIT – on Facebook and regularly check our Website for updates.