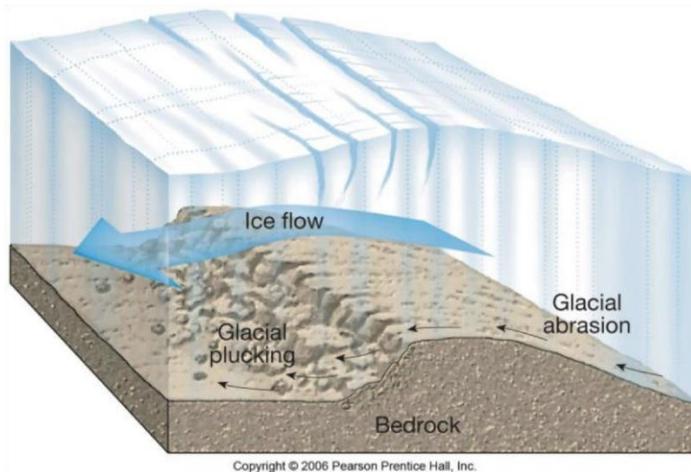


SAIT Newsletter, September 2019

Tribology – specifically computational tribology – will play a role in measuring the impact of climate change. Glaciers are comprised of snow accumulated over many years and compressed into large ice masses. Formed when snow remains in a location long enough to form ice, glaciers are unique in that they can move, flowing like extremely slow rivers due to their sheer mass.

Glaciers currently occupy approximately 10 percent of the world's land surface, mainly in the polar regions and contain approximately 75 percent of Earth's fresh water. Both percentages clearly indicate the importance of the relationship between human life and the health of the glaciers.

Glaciers move because of their immense weight, or the force of gravity. Movement occurs in different directions: down mountain valleys, across plains, or even out into the sea. The bottom of a glacier



moves slower than the upper levels due to the **friction** created between the ice and the ground beneath it.

The **roughness** of the ground's surface beneath the glacier, the temperature of the surfaces in contact with each other and the incidence of cavities filled with water all influence the level of friction and consequently the speed at which the glacier flows. As these changes occur under the massive size of the glacier, it is difficult to measure the exact parameters.

Measuring these parameters continues to gain in importance due to the relationship between the melting of glaciers and global warming. Global warming and the resulting glacier melt leads to a variety of issues including, but not limited to, a shortage of freshwater, excessive flooding, animal extinction, disappearance of coral reefs, reappearance of lethal diseases and disruption of weather patterns.

For a detailed look at this fascinating subject that impacts all of us, please visit [Modelling Ice Friction in Glaciers](#).

ETT – Essential Tribology Terminology

Three of Tribology's terms that are used and agreed upon:

- **Sulphated Ash:** The residue resulting from oxidation, under prescribed conditions, of an oil sample which has been reduced to a constant weight by heating with sulphuric acid. May be used as measure of the amount of metallo–organic additives present in oils.
- **Sulphurised Oil:** An oil, to which elemental sulphur has been added, either loosely combined with the oil, or added in combination with a fatty oil. Used in applications where reactive sulphur is desirable to provide extreme–pressure characteristics, such as in gear oils and cutting oils.
- **Thermal Stability:** The ability of a fuel or lubricant to resist cracking and decomposition during prolonged exposure to elevated temperatures.

SAIT Training

Follow the path from data to information and into knowledge:

Lubrication Engineering 123 was held recently at the Breakwater Lodge, Waterfront, Cape Town. Eleven people attended the course, coming from all over South Africa. The results have not yet been released.



Delegates to Lubrication Engineering 123

The SAIT Training schedule for the remainder of 2019/20 is:

- **LE 124:** 30 September to 4 October 2019, Johannesburg
- **LE 125:** 24 to 28 February 2020, Johannesburg

From May 2020, all courses will be at the revised 2020/21 rates; prices and dates to be announced before the end of 2019.

Costs: SAIT Members: R16 031 Non-Members: R17 894 Students: R4 922

STLE Examinations at SAIT

The South African Institute of Tribology will host three examinations of the Society for Tribologists & Lubrication Engineers (STLE) on **22 November 2019**. The venue is Science Park, Kelvin, and time is from 09:00 to 12:00. **The exams are open to SAIT members in good standing.**

PLEASE NOTE: Closing date for registration is 25 September 2019, and exam fees must be paid in full by 30 September 2019. Should there be fewer than six confirmed delegates, these exams will be postponed until 2020, dates to be confirmed.

- **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)**



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.

International Events:

- **October 8-11, 2019: Global Lubricant Week 2019** – will be held at the Radisson Royal Hotel in **Moscow**. 650 participants from 25 countries with 50 speakers over 4 days. For more details please contact, contact Elena Konstantinova Tel: +7 495 502-5433 / +7 495 778- 9332; e-mail: konstantinova.elena@rpi-inc.ru and at [Global Lubricant Week 2019, Moscow](#).
- **October 17, 2019: Lansing Michigan USA, the Petroleum, Quality Institute of America**, in conjunction with the Michigan Department of Agriculture & Rural Development, is running a joint industry forum – '**Regulations and Realities in the Lubricants Industry.**' The objective of the forum is to advance efforts to improve the consistency of quality and product integrity of lubricants in the market. The Forum will take place at the Michigan Department of Agriculture and Rural Development's Heffron Metrology Laboratory in Williamston, Michigan. There is no fee to attend and it is open to lubricant manufacturers, distributors, retailers, and regulatory representatives.
- **December 1-4, 2019: IndiaTrib 2019**, is the International Conference being organized by the Indian Institute of Science and Tribology Society of India. The conference will be held at the Indian Institute of Science, Bangalore. IndiaTrib 2019 is going to be a unique event with a galaxy of international Tribology experts who have already confirmed their participation as plenary and Keynote speakers. This could be a once-in-a-lifetime opportunity to hear from among the best Tribologists around the world.. [IndiaTrib - 2019](#)
- **January 2020: the 22nd International Colloquium Tribology** will take place at the Technische Akademie Esslingen. The conference provides an international exchange forum for the industry and the academia. Leading university researchers present their latest findings, and representatives of the industry inspire scientists to develop new solutions. Discussions and co-operations enable attendees to meet current tribological challenges.

One of the main topics is the forthcoming e-mobility technology, its various aspects and its consequences for the lubrication and tribology community.

Local Event

The 8th African Base Oils and Lubricants Conference is coming up on **5-7th of November** in **Cape Town, South Africa**.

The Conference and Seminar will focus on the challenges and opportunities for the African market, with topics covering the African free trade agreement, Environmental challenges and IMO 2020.

Hear from

Chevron Base Oils// Engen Petroleum// Paccgate// Hi Tech Oils & Grease// Puma Lubricants// ROSE Foundation// Siddharth Grease and Lubes

Looking at Grease demand in Africa?

New for this year, the pre-conference seminar will focus on grease demand in Africa. With topics focusing on wind turbines and the mining industry, the seminar will give specific time to discuss strategies in grease.

Meet across the market

The agenda includes 7+ Hours of networking time, including a drinks reception on Day 1. With both international attendance and representation from across Africa.

The agenda for 2019 can be found [here](#)

How to register

If you are looking to attend, you can register by:

- 1) Email – Please return the attached registration form to lauren.waugh@icis.com
- 2) Phone – Please get in touch on +44 207 911 1310 and I can register your place by phone
- 3) Online – Register online [here](#).

What do You Know About Pour Point Depressant Additives

The pour point of an oil is the lowest temperature at which an oil is observed to flow by gravity in a specified lab test. Specifically, the pour point is 3°C (5°F) above the temperature at which the oil shows no movement when a lab sample container is held horizontally for 5 seconds.

Pour point depressants are polymers that allow oil and lubricants to flow at very low wintertime temperatures without heavy wax formation at these cold temperatures and enable the oil to remain pumpable (flowable). They are typically used in paraffinic base oils in applications where extreme low machine start-up temperature conditions are possible. Most paraffinic motor oils employ the use of pour point depressants.

Pour Point Depressants work by modifying the interface between the crystallised wax and the oil.

Never select a lubricant product based on its pour point alone. The cloud point is approximately the low temperature at which the oil turns cloudy due to the solidification of wax crystals within the oil. The pour point of an oil is covered by ASTM D97 and D6892-03. Several methods are used to determine the cloud point including ASTM D5772-10.

Sourced from Noria – for more details please visit [Noria Corporation - Machinery Lubrication](#).

PARTING SHOT

Did You Know?

The lack of knowledge in the areas of tribology is of great concern, as this results in increased cost of ownership for industry as well as the private individual. John Fitton summarises:

“It is the responsibility of all of us involved in the field of tribology, to educate and share information (factual) that will assist in improving quality and ultimately performance in this sector.

“The top three major issues that need to be addressed are:

1. “Education – increasing the awareness of all stakeholders as to the impacts that tribology has on productivity, total cost of ownership and energy consumption.
2. “Sharing of best practice – this will increase knowledge and experience across industry, without ‘re-inventing the wheel’.
3. “Research and development – local R&D is conducted, and tribology training implemented in tertiary education.

“There are several training courses in tribology, but it is not only about the classroom studies, it is about how to utilise this knowledge in everyday application.

“I was recently in a non-franchised workshop, assisting a friend with a vehicle repair and found myself discussing the engine lubricant that was used for the service. This was an old obsolete specification (15 years), being used in a six-year-old vehicle. We ended up changing the lubricant for a current specification lubricant. This was an additional service cost, but will reduce the total cost of ownership. The workshop was using the obsolete specification lubricant, having been told that it was an excellent product at a good price.”

Let’s all share and educate end-users regarding tribology and the cost of lubrication, not the price of lubricant.

Talk to us

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.

Please also let us know what would interest you for technical sessions / webinars – or any interesting presenters from whom you would like to hear.

Thanks in advance for your assistance.

**Please Like The South African Institute of Tribology - SAIT - on [Facebook](#)
and regularly check our [Website](#) for updates.**

