



# Newsletter, January 2014

We wish all our members, their colleagues and families, a Peaceful and Prosperous 2014.



## SAIT Programme 2014

### 11 February 2014, an Afternoon Seminar on Gears:

Registration will be at 13:00, when a finger lunch will be served. The programme will begin at 14:00 and the last presentation will end at 16:00, when refreshments will be available. To register, or if you wish to present a paper or sponsor this seminar, please contact Gill or Isabel at tel. 011 804-3710, [secretary@sait.org.za](mailto:secretary@sait.org.za) or [admin@sait.org.za](mailto:admin@sait.org.za).

### 24 – 28 February 2014: 5-day Lubrication Engineering Course (88)

– Science Park, 1 Northway off Marlboro Drive, Kelvin, Sandton, Johannesburg. *This course is registered with ECSA, SAIMM number pending, and is awarded five CPD credits, SAIMM No.00620. This course is now fully booked.*

### 25 March 2014, Proposed Afternoon Seminar on Oil Analysis is proposed.

If you are interested in presenting a paper at this seminar, please contact Gill or Isabel for the relevant information, tel. 011 804-3710 or [secretary@sait.org.za](mailto:secretary@sait.org.za) or [admin@sait.org.za](mailto:admin@sait.org.za).

### 9 May 2014: SAIT Annual Dinner – Please diarise and make sure to book when details follow in the New Year.

### 13 May 2014: SAIT AGM and Technical Meeting – Please Diarise and make sure to book when details follow closer to the time.

### 19 – 23 May 2014: 5-day Lubrication Engineering Course (89)

– Sica's Guest House, 19 Owen Avenue, Mayville, Durban. *This course is registered with ECSA, SAIMM number pending, and is awarded five CPD credits.*

### 28 May 2014: Greases Course – Details to follow

### 2 – 6 June 2014: 5-day Lubrication Engineering Course (90)

– Science Park, 1 Northway off Marlboro Drive, Kelvin, Sandton, Johannesburg. *This course is registered with ECSA, SAIMM number pending, and is awarded five CPD credits.*

### 25 – 29 August 2014: 5-day Lubrication Engineering Course (91)

– Breakwater Lodge, V&A Waterfront, Cape Town. *This course is registered with ECSA, SAIMM number pending, and is awarded five CPD credits.*

### 15 – 19 September 2014: 5-day Lubrication Engineering Course (92)

– Science Park, 1 Northway off Marlboro Drive, Kelvin, Sandton, Johannesburg. *This course is registered with ECSA, SAIMM number pending, and is awarded five CPD credits.*

### 19 & 20 November 2014: SAIT CLS Study Course –

For those wishing to write the STLE CLS exam, attendance of this course is strongly advised, especially bearing in mind the imperial measurements that are used and the focus on steel industry lubrication. The course will be facilitated by a current CLS holder, and study modules can be made available before the course dates, if needed. The STLE exam standard is high and the pass mark is 70%. Global pass rates are around 50%.



**21 November 2014: STLE - CLS, OMA & CMFS exams** – Science Park, 1 Northway off Marlboro Drive, Kelvin, Sandton, Johannesburg.

*For further details of all the above, please contact Gill or Isabel at 011 804-3710 or e-mail either [secretary@sait.org.za](mailto:secretary@sait.org.za) or [admin@sait.org.za](mailto:admin@sait.org.za)*

**CALL FOR PAPERS – AFTERNOON SEMINAR: “OIL ANALYSIS”**



The SAIT will present an afternoon seminar on “Oil Analysis”, at Science Park, Northway, Kelvin on **25 March 2014**. We are inviting interested persons to submit papers for this event. The seminar is intended to bring together all parties interested in this important and topical subject.

With the continuing focus on cost cutting, longer asset lives and better efficiencies, many companies are using oil analysis as the basis for their maintenance scheduling. The small cost of oil analysis compared to just a few hours of downtime makes this a very powerful tool in the fight against wear and unexpected failures.

**Guidelines for Speakers:**

Authors are invited to submit papers or case study material on topics that are informative and current. The following subjects are a guideline only for the day’s programme. Any other suggestions, ideas or topics that could be associated with the subject, will be welcome:

**Oil Analysis**

- Analytical testing
- Designing an oil analysis sampling programme

- Effective sampling techniques
- Diagnostics and recommendations
- Financial modeling and effectiveness of oil analysis programmes
- Non-standard tests, and advances in techniques
- Using oil analysis in combination with other condition monitoring techniques

Please send a brief synopsis, and short title, of your proposed presentation or case study for approval, maximum 500 words, to the SAIT, email [secretary@sait.org.za](mailto:secretary@sait.org.za), [admin@sait.org.za](mailto:admin@sait.org.za) or fax to 086 719-2261 as soon as possible. We would like to circulate the programme to a large target market to ensure a good attendance. Please include title, author and affiliation, and your contact details. The full paper, presentation or case study is required by **7<sup>th</sup> February 2014**.

The seminar is not a selling platform. Product promotional material or sales orientated videos should not be included in the presentations unless modified to provide only technical aspects.

For any enquiries regarding the technical nature of the seminar please contact David Beard on 082 850-3205, and for general enquiries phone Gill or Isabel at 011 804-3710.

**The SAIT Will Once Again Host the CLS, OMA & CMFS Exams of the STLE**



*By Isabel Bradley, SAIT Assistant Secretary.*



Each year in November, the South African Institute of Tribology (SAIT) hosts the Certified Lubrication Specialist (CLS), Oil Monitoring Analysis (OMA) and Certified Metalworking Fluids Specialist (CMFS) exams of the American-based Society for Tribologists and Lubrication Engineers (STLE). The exams are open for fully paid-up members of the SAIT.

Candidates wanting to write the STLE exams on 21 November this year, and to attend the SAIT CLS Study Course, are encouraged to contact the SAIT as early as possible, to register and begin studying in good time to ensure successful results.

With reference to writing of the CLS exam, I quote from the STLE's website (<http://www.stle.org/certification/cls/program.aspx>).

“Applicants taking the CLS exam must attest to three years minimum experience in the field of lubrication. Further, in the event of a failed exam, a one-year waiting period will be required before retaking the examination.

**“What is a Lubrication Specialist? A Lubrication Specialist is an individual who might be designated a “lubrication Engineer” by his/her employer.**

“The CLS Certification recognizes those individuals who possess current knowledge of lubrication fundamentals and theory. Certification is obtained by scoring at least 70% on a three-hour exam with 150 questions chosen at random from a stockpile of questions covering the subjects:

- Lubrication Fundamentals
- Fluid Conditioning
- Storage, Handling and Application of Lubricants.
- Monitoring and Reducing Consumption of Lubricants.



- Gears
- Bearings
- Seals
- Fluid Power
- Lubricant Manufacturing
- Pneumatics
- Transportation Lubricants
- Metalworking
- Solvents and Cleaners
- Problem Solving
- Lubricant Analysis
- Lubrication Programs”

A list of recommended reading materials is available on the STLE website,

[www.stle.org](http://www.stle.org). The most important reading matter, according to David Beard, SAIT President and lecturer on the SAIT's CLS Study Course, is the AIST's The Lubrication Engineers Manual, 4<sup>th</sup> Edition. This substantial volume is available for purchasing from the SAIT at R2 964.00, including VAT. *David recommends that this manual be purchased, read and understood by candidates, well in advance of the exam, preferably nine months to a year, to allow the candidate time to study it in depth.* The SAIT recommends that candidates for the CLS exam attend the SAIT CLS Study Course, scheduled for 19 and 20 November 2014. The cost of the SAIT CLS Study Course is R3 990.00 including VAT.

Candidates need to register for the course by 16 September. Once registration is confirmed and payment received, David will forward preparation notes and exercises, based on the Lubrication Engineers Manual, to the candidates. *Actively participating in the exercise and the preparation notes will ensure the candidates understand and benefit from the content of the Study Course, and assists them to be fully prepared to pass the exam.*



The CLS Exam will be written in Johannesburg at Science Park on 21 November 2014. The deadline for registration for the exam is 1 October 2014, to allow the SAIT to liaise with the STLE in America. Candidates need to register with and make payment of R4 446.00 to The SAIT.

Should candidates achieve less than 70%, they will have to wait a year before re-writing at a further cost of R2 223.00.

For further information about the SAIT CLS Study Course and the STLE CLS exam in South Africa, please contact either Gill or Isabel at the SAIT, telephone 011 804-3710 or e-mail either [secretary@sait.org.za](mailto:secretary@sait.org.za) or [admin@sait.org.za](mailto:admin@sait.org.za).

### The Cutting Edge of Tribology

By Isabel Bradley, SAIT Assistant Secretary



Fruits of the Vine: Knife by Kevin Harvey of Heavin Forge

Knife-making is a fascinating hobby; as well as generating enormous pleasure, it could earn extra income after retirement, or become a lucrative profession for anyone from engineers to teachers and musicians.

A knife-maker can, with experience, training and the appropriate equipment,

move on to creating hand-made 'edged investments' of great beauty and value.



Raw Materials for Billet

The first requirement, of course, is the steel required to create a blade. 'Blanks' are

available for purchasing, or one can forge one's own blanks.

Appropriate quality stainless steel is the most popular, but bronze, titanium, ceramic and high carbon steel can also be used. Beautiful blades are made from Damascus, or pattern-welded steel, the creation of which is an art in itself. Damascus steel contains patterns which are forged from 'billets' made up of layers of different materials, mixing high carbon steel with other metals to create designs in varying colours, for example nickel for a silver grain.



Golden Trout and Fly Knife: by Kevin Harvey of Heavin Forge

One of the most beautiful knives I've ever seen was made by Kevin Harvey of Heavin Forge Knife-making Studio and School\*\* in Belfast, Mpumalanga: it is a folding knife of Damascus steel containing a repeated pattern of trout and flies.



Close-up of Golden Trout and Fly Knife: by Kevin Harvey of Heavin Forge

Creating beautiful blades from steel blanks of whatever description requires time, skill and a wide variety of tools, from jigsaws and hacksaws to grinders, belt-sanders, files and whetstones; from welding torches, furnaces and open fires to a wide variety of oils such as castor oil, olive oil or engine oil for cooling the steel. A workbench and a vice are both essential furniture for the workshop.



Close-up of carving on handle of Fruits of the Vine Knife by Kevin Harvey of Heavin Forge

Beautiful blades need beautiful handles. The materials used are limited only by the knife-maker's imagination. Handles can be made from wood to bone, horn, ivory and gemstones. Skills needed for creating handles include carving, inlay-work, stone cutting and polishing techniques, and preservation. The value of a knife can be greatly enhanced by an exquisite handle.

The sheath is the finishing touch for these works of art. Sheaths, too, can be made from many different materials, but are usually made out of leather.



Pheasant Feather Knife & Sheath: by Kevin Harvey of Heavin Forge

Tribologically, does an effective blade require positive friction or negative friction? In operation, it would require negative friction, in order to slide through and separate the material to be cut. In manufacture, positive friction is essential to cut, drill, shape and polish the blade; paradoxically a lubricant is used in most of these processes to enhance the friction, improve efficiency and cool the cutting tool.

From start to finish – laminating, forging, cutting, grinding, polishing, lubricating, carving and managing materials – knife-making is an exercise in tribology.

\*[http://www.knifekits.com/vcom/product\\_in\\_fo.php?products\\_id=3004&osCsid=hjdrscag75uc8kuadl3a4nrv2](http://www.knifekits.com/vcom/product_in_fo.php?products_id=3004&osCsid=hjdrscag75uc8kuadl3a4nrv2)

[http://www.heavinforge.co.za/html/gallery\\_of\\_past\\_work.html](http://www.heavinforge.co.za/html/gallery_of_past_work.html)

\*\*To see more of Heavin Forge's exquisite work, visit their website, <http://www.heavinforge.co.za/>, and see Isabel Bradley's article, Visiting Heavin, at [http://www.openwriting.com/archives/2007/01/visting\\_heavin\\_1.php](http://www.openwriting.com/archives/2007/01/visting_heavin_1.php)

Other References:

<http://www.fischercustomknives.com/MakingSteel.html>

<http://www.knifeup.com/knife-making-tools/>



[http://en.wikipedia.org/wiki/Pattern\\_welding](http://en.wikipedia.org/wiki/Pattern_welding)

**International Tribology Events.**  
**ASIATRIB 2014, 17-20 February, 2014 at the Jaypee Palace Hotel & Convention Centre, Agra, India.** To download the First Announcement & Call for Papers, click on this link: ... or go to [www.tribologyindia.org](http://www.tribologyindia.org).

**Special Symposium and Joint Sessions at STLE 2014, 18 – 22 May 2014, Lake Bena Vista, Florida, USA.**

STLE2014 is the premier technical event showcasing the latest research in the field of tribology and lubrication engineering through technical presentation, education courses, discussion panels and much more.

In addition to all the great technical resources, this year's event will host 2 joint technical sessions and a special symposium.

**Molecular Chemistry and Lubrication Rheology**

This symposium invites presentation on exploration, understanding, and modeling of lubricants properties and performance based on molecular chemistry.

**In Situ Tribology**

(Materials Tribology and Tribotesting Joint Session)

This joint session will cover a multi-disciplinary range of topics encompassing the use of novel and emerging in situ techniques to provide greater insight about interfacial process and phenomena, materials characterization, and the mechanisms of contact mechanics and adhesion within a buried interface. [\[Click here for more details\]](#)

**Nanoscale Phenomena in Materials Tribology**

(Materials Tribology and Nanotribology Joint Session)

This joint session will cover a wide range of topics involving the use of nanotribological characterization techniques, with a particular interest in in-situ nanotribological methodologies, to provide a better understanding of the nanoscale interfacial process. [\[Click here for more details\]](#)

Interested authors can submit abstracts at the following link

<http://stle2014.abstractcentral.com>

**LUBMAT 2014, 25 – 27 July 2014:** a conference and exhibition on Lubrication, Maintenance and Tribotechnology in the Hilton Manchester Deansgate Hotel, UK. For further information go to <http://www.lubmat2014.org/>.



**X Anniversary International conference "Lubricants Russia 2014" - 1195 Euro\*12-13 November 2014.**

**14 November 2014. International conference "Greases Russia 2014" - 450 Euro\***

Accompanying Exhibition: Standard Exhibition Booth (3x2m) - 2250 EUR\*  
To register please contact Elena Konstantinova or Anna Lisak +7 495 502-5433 or +7 495 778-9332, or e-mail: [Konstantinova.Elena@rpi-inc.ru](mailto:Konstantinova.Elena@rpi-inc.ru) or [Lisak@rpi-inc.ru](mailto:Lisak@rpi-inc.ru) or visit our website: <http://rpi-conferences.com>