



TRIBOLOGY and the wheel!

The wheel was probably invented around 8,000 B.C. in Asia. The invention of wheels helped vehicles to move along by transferring and reducing friction. The oldest known wheel found in an archaeological excavation is from Mesopotamia, and dates to around 3500 BC. This period was known as the Bronze Age. **(Please visit <http://www.tribonet.org/tribology-history/>)**

ETT – Essential Tribology Terminology

Comprehend the essential terminology of tribology

- ✓ **Aromatics** – Typical aromatics are benzene, toluene, xylene, phenol and naphthalene. They are a group of hydrocarbons characterised by their having at least one ring structure of six carbon atoms, each of the latter having one valency outside the ring. These hydrocarbons are called aromatics because many of their derivatives have an aromatic odour. They are of relatively high density and possess good solvent properties. Certain aromatics have valuable anti-knock characteristics.
- ✓ **ASTM** - ASTM international - formerly known as the American Society for Testing and Materials (ASTM), is a globally recognized leader in the development and delivery of international voluntary consensus standards. Today, some 12,000 ASTM standards are used around the world to improve product quality, enhance safety, facilitate market access and trade, and build consumer confidence.

SAIT TRAINING – Avoid the slippery slope of ignorance

“LUBRICATION ENGINEERING”

- Five-day course - 5 CPD credits
- Course Objectives: This is designed to transfer a thorough understanding of tribology from a lubrication engineering perspective. Over 20 topics take participants through basic chemistry to the theory of rubbing contact and friction in all industrial applications including the application of management principles, safety and the environment in tribology.

16-20 October Johannesburg

For more information and to register for training please Ctrl + Click <http://www.sait.org.za/events/training>

TRAVEL – visit India in December 2017! 9th International Conference on Industrial Tribology (ICIT 2017) at Kolkata (Calcutta), India.

- ✓ The Theme Session will focus on “**Tribology – A Key Enabler for Industrial Growth**”. To enrich the content of this Conference, parallel technical sessions have also been planned covering 18 areas of tribology.
- ✓ A very detail and interesting brochure (ICIT-kolkata-brochure.pdf) can be downloaded from www.tribologyindia.org

Sept 17-22	6th World Tribology Congress – Beijing China
Nov 15-16	4 th ICIS & ELGI Industrial Lubricants Conference – Vienna Austria
31 Oct – 2 Nov	6 th African Base Oils and Lubricants Conference - Ghana
Jan, 9-11, 2018	21 st International Colloquium Tribology, Industrial and Automotive Lubrication Germany/Stuttgart, EU

LUBRICATION 110 FEEDBACK



Lubrication Engineering 110 was held in Johannesburg from 24-28 July this year. **21 Delegates attended this course; 17 passed, 2 of those with over 70%.** The following comment is much appreciated and worth sharing

“Thank you for the great service we received during the course, it was an absolute pleasure to do the lubrication engineering course.”

DON'T OVERLOOK FRICTION!

The role of tribology tends to be dominated by thoughts of lubrication but friction is the dominant factor. Here's a definition:

- Friction is a physical resistance to relative motion at two or more surfaces in a state of mutual contact. The most significant physical parameters for describing friction are:

Friction force – the amount of force with which a motion is resisted

Coefficient of friction (or friction factor) – Friction force relative to normal force

Friction power – Friction force X sliding speed

And then friction is classified:

1. According to condition of friction (type of contact)
2. According to type of motion

These important principles have been extracted from the SAE Bosch Automotive Handbook 7th edition page 304 – materials science

UPCOMING LOCAL EVENTS

Wed 19 Sept 2017 at 17:30 at Science Park, 1 Northway, Kelvin

- “The Essentials of Formulating and Blending Synthetic Lubricants and PAO vs GRP III”

3 Oct 2017 at 16h00 Webinar

- "Report Back from the World Tribology Congress in Beijing in September" by Patrick Swan

DID YOU KNOW? – ‘A tribological tip-trip’

‘**Graphene**’ is a recently discovered material. Graphene is defined as an *extremely electrically conductive form of elemental carbon composed of a single flat sheet of carbon atoms arranged in a repeating hexagonal lattice.* Tribonet’s newsletter carries an article on the makeup and performance of a new non-liquid lubricant developed by researchers at Purdue University. A novel graphene-zinc oxide composite film was created and studied as a solid-state lubricant for friction and wear reduction under extreme load conditions.

Press reports record that if the 20th century was the age of plastics, the 21st century seems set to become the age of graphene

For further info please visit these two sites:

- <http://www.tribonet.org/graphene-based-solid-lubricant-reduces-friction-and-wear/>
 - <http://www.explainthatstuff.com/graphene.html>
-