

2010 Best Paper Award

The ELGI Best Paper Award committee is pleased to announce that this year's award for the best paper will be presented to Mr Bernhard Koch (Fuchs Europe Schmierstoffe GmbH Germany) for his outstanding paper on "Investigation on the visco-elastic properties of lubricating greases in dependency of base oil polarity and thickener type".

Author: Bernhard Koch

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Bernhard Koch received his Diploma in Chemistry in 1979 from the University Hannover, Germany. From 1979 to 1984 he worked for the Institute of Clinical Biochemistry at the University Bonn on the development of analytical methods of human hormones. From 1984 to 1992 he was with DLR, German Aerospace Research centre in Stuttgart as a scientist in the department for lubricants. From 1992 to 1994 he joined Klüber Lubrication. Since 1995 he has been with Fuchs as research scientist in their R&D department working on lubricating greases. Current activities: development of industrial and automotive lubricating greases.

This paper reports on experiments with a modern high resolution viscosimeter where model greases were tested at 25 °C and 80 °C. The aim was to study the influence of base oil polarity on visco-elastic properties of greases. As thickening systems Lithium-12-hydroxystearate, diurea and highly dispersed silica were selected and each combined with PAO, PAO/mineral oil, ester and polyglycol. The experiments showed that there are significant differences in visco-elastic behaviour and yield point. Under the premise that the yield point relates to the ability of grease to seal a lubrication area from the outside or to flow to a lubricating gap it became obvious that the usual classification according to NLGI number is not sufficient when it comes to greases with different base oil types or thickeners.

All the presentations were carefully considered and judged on selected criteria that resulted in an overall mark worthy of this potential achievement. These criteria included paper content and presentation skills that covered Originality, Technical content, Value to lubricant industry, Impact as a problem solver in the field, Impact on Environmental Issues, Financial impact in industry, Presentation skills and enthusiasm, Subject knowledge, Quality of presentation and Handling of Questions and Answers.

On behalf of this committee and the ELGI board I would like congratulate Bernhard for this important and worthy achievement.

BPA Committee
L. Hamnelid (Chair)