2019 ELGI AGM Best Paper Award

31st ELGI AGM

13th-16th April 2019 Athens Greece

ELGI's Best Paper Award Committee unanimously selected the paper & presentation:

Grease Production, CO_2 emission..... a New Relationship!

as the winner of ELGI's Best Paper Award 2019.

Presented by Andreas Dodos – Eldon's in partnership with Nynas & Stratco

All the presentations were evaluated on several criteria that covered

- Content of the Paper
- Quality of the Presentation
- Embodied the Spirit of Originality & Technological Innovations
- Not presented before

On behalf of this committee and the ELGI board we would like congratulate Andreas Dodos (Eldon's) Mehdi Fathi-Najafi (Nynas AB) & John Kay (Stratco) on this important and worthy achievement.

Andreas Dodos – Eldon's

Andreas Dodos received a Masters degree in Chemical Engineering and Environmental Technology from the University of Manchester, UK. He has spent the last 18 years at Eldon's SA, with duties mainly focused on industrial and marine lubricants development. Since 2007 he has been actively involved in product stewardship with focus on global regulatory developments. He is a member in a number of professional bodies such as the ELGI, the Hellenic Maintenance Society and National Tribology Centre. Since 2010 he has been the Chairman of the European REACH Grease Thickener Consortium and he is currently serving on the ELGI Board of Directors. Andreas has extensive experience in formulation and application of lubricating grease and since 2018 he is CLGS certified by the NLGI – Certified Lubricating Grease Specialist.

Mehdi Fathi-Najafi - Nynas AB

Mehdi holds Master of Science and Licentiate Engineering degrees in Chemical Engineering from Chalmers University of Technology in Gothenburg, Sweden. He worked as a research engineer and teaching staff member at the Chalmers University for almost 4 years prior to his move to the oil and grease industry in 1996. His current position at Nynas AB is Senior Technical Advisor & Group Specialist

John Kay - Stratco

John Kay graduated *summa cum laude* from Christian Brothers University in Memphis, Tennessee in 1979 with a B. S. degree in Mechanical Engineering. He was inducted in the Tau Beta Pi Engineering Honour Society and the Alpha Chi Interdisciplinary Honour Society. He was employed as an engineer by a major design/build mechanical contractor in St. Louis, Missouri from 1980 through 1996 where he became the principal design engineer beginning in 1988. He joined STRATCO in 1997, where he is the Vice President of Engineering, operating out of the office in Scottsdale, Arizona. He has authored technical papers and articles through NLGI, ELGI, CLGI and *Hydrocarbon Asia*. He is currently a Licensed Professional Engineer and a Certified Lubricating Grease Specialist. Also, he is a member of ASME (American Society of Mechanical Engineers) and ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers).

Grease Production, CO_2 emission..... a New Relationship!

Manufacturing conventional lithium grease is a very energy intensive operation and, surprisingly, to the knowledge of the authors, no one prior to a recent technical paper [1] has studied the energy consumption and possible environment impact of the grease manufacturing process. It is well known that carbon dioxide has been shown to be the major contributor to greenhouse emissions and global warming and energy consumption can be directly related to the manmade contribution of this gas.

The aim of this paper is to measure the energy consumption in an industrial scale production when a pressurized reactor is used and is further compared to traditional open kettle reactor. All the process parameters have been kept constant as well as the viscosity of the base oils used. The total energy (electrical for mechanical operations such as pumping, mixing and homogenizing as well as fuel for heating) consumed for production purposes is recorded for all production stages: vessel charging, cooking, cooling/diluting and homogenizing. The measured energy consumption used for each batch is then converted to normalised CO_2 emission and savings in utility cost for each of the batches evaluated. In order to make this comparative study more accurate, the finished greases have also been characterized according to the specification required by the end-users.

The authors believe that the outcome of this study could be a milestone in assessing grease production in terms of significant reduction of the carbon dioxide and increase awareness of the impact of our industry in the global arena.