



“AddNano”: introducing innovative nanotechnology into the value chain of the lubricants market.

Infineum UK Limited along with 14 other partners have secured funding from the Framework Programme 7 of the EC to start the collaborative project AddNano on 1 October 2009. The strong partnership from industry and academia across Europe and Israel, will work on the development of new formulation lubricants with improved performance.

Fluid lubricants are used in almost every field of human technological activity and their purpose is multi-fold: they reduce frictional resistance, protect the engine against wear between contacting surfaces, remove wear debris, reduce heating and contribute to cooling, improve fuel economy, improve emissions.

Advanced nano-materials recently developed, such as inorganic fullerene-like materials (IF's) and others, have shown some initial promise for their contribution to reducing friction and enhancing protection against wear. The transfer of promising nanotechnology research results into new industrial technologies still represents a bottleneck. If IF's can be manufactured at commercial-scale, incorporated in a stable fashion into full formulations, and their performance benefits can be sustained under those circumstances, they offer the prospect for some performance breakthroughs not seen since the development of the now ubiquitous anti-wear additives, Zinc Dialkyl Dithiophosphates (ZDDP's), around 70 years ago.

There would indeed then be the potential that the IF nano-materials might facilitate reduction in the use of ZDDP's in lubricants. For engine oil (crankcase) applications, this in turn can assist in the durability and performance of exhaust-treatment and accordingly reduce harmful emissions. Exhaust catalysts tend to become poisoned by the Sulphur and Phosphorous in the conventional additives. Within engine oils and other lubricant applications, such as transmission fluids, and for greases used in rotational bearings, the potential exists for lubricants containing nano-materials to significantly reduce friction and enhance machine durability. This can contribute to substantial energy savings, reduced equipment maintenance and longer machine lifetime.

The “AddNano” project is partially funded by European Commission within the 7th Framework Programme (NMP-2008-1.2.1, under grant agreement n° 229284) and its overall objective is to overcome the technological barriers involved in the development of large scale market introduction of a new generation of lubricants incorporating nano-materials. The properties and performances of advanced nano-based lubricants will be improved, along with the scaling-up of pilot lines for nanotechnology-based materials, components and processes. The total budget for the project is €12 million with a funding of €8.5 million from the EC



The **Project Consortium** includes a strong and international partnership of Universities, Research Centres, Industries and SME's:

Universities/Research Centres

- Politecnico di Torino (I)
- Stockholm University (SE)
- Nanomates - Università di Salerno (I)
- Ecole Centrale de Lyon/LTDS (F)
- Weizmann Institute (IL)
- CIDETEC (ES)

Industries/SME's

- Infineum UK Ltd. (UK)
- BHR Group Ltd (UK)
- Nanomaterials Ltd. (IL)
- Krafft Lubricants (ES)
- Multisol France (F)
- Petronas Lubricants (I)
- Ricardo UK Ltd. (UK)
- Centro Ricerche FIAT (I)
- InS (F)

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