

# In conversation with...



**Thomas Norrby**, *Technical Manager & Senior Specialist – Lubricants, Nynas AB*

***When appointed to your current role at Nynas you said your support for the Lubricants industry would remain “in words and deeds”. What did you mean by this and why are lubricants important?***

I still see my role to put naphthenic base oils to better use, to further the knowledge about what naphthenics can do, for the benefit of the lubricants industry and for the end users. I wanted, then and now, to become a “technical influencer” of ever better design decisions the benefits the end user and works well for the lube blenders. I have now spent almost 25 years in the lubricants and base oil industry, and I have begun to zoom in on some areas where I sense there is room for improvement, such as advancing the understanding of the key importance of solvency in lubricant formulations.

***You are a formidable presence in the sector and your technical presentations at industry events highly sought after. But how did you move from university professor/lecturer to a position in industry?***

Well, that was quite easy. I was offered a job! After finalising my PhD in organic chemistry, I felt ready for something else. I was willing to give it a try and ended up staying more than 15 years with my first company. I soon found my way back to university in a part-time position as Adjunct Professor at Luleå University of Technology, through the new work I had done as a researcher for the lubricants blender I was working for. There were some existing collaborations, but the

University was quite eager to deepen that relationship. Which of course proved to be an enormous chance for me to dive into applied machine engineering and design of lubricated systems in the widest sense.

***Nynas’ vision is to be a global leader in naphthenic products. Can you explain the difference between the value and properties of naphthenic versus paraffinic oils?***

I thought you would never ask... naphthenic base oils are one of the “big four”, accounting for almost 10% of the global base oil volume. Naphthenics are not primarily locked to the development of automotive engine oils, which give a huge freedom of design. Naphthenics are available over a vast viscosity range, and with different solvency and colour for a myriad of lubricant and process oil applications. With such a wide array of viscosity, solvency and availability, the naphthenic base oils cover a lot of bases...

***What are the most significant changes, in terms of chemistry formulation/innovation, that you’ve seen in the industry throughout your career? And is sustainability now the driving force behind further changes?***

Since 1998, when I started out, almost everything has happened! The rise of Group II base oils, new players in the Group III supply, the emergence of GTL, the shift in consumption from North America and Europe to Asia/Pacific. A steady growth of ever more advanced lubricants and longer drain intervals. It goes on and on. The rise of the sustainability aspect

only highlights the huge contribution of lubricants to energy generation and efficient energy usage in vehicles and machines. The more complete the understanding of the overall life cycle aspects of the manufacture and use phase of lubricants become, the easier it is to document and explain the benefits. A more full life cycle perspective will also help put to rest some of the challenges in selecting the best lubricant, that being a biodegradable, biobased or readily recyclable mineral or synthetic base oil. Most of the oil that goes into the base oil industry ends up serving its use for extended periods of time, years and decades. This in contrast to short-term fuel use only. So sustainability arguments are a good chance for the industry to prove itself valuable and sustainable.

***What future innovations can we expect? Will life imitate science, or will science imitate life?***

I think innovations around the electrified automotive drive train, and in relation to the myriad of interesting technical challenges in renewable energy systems engineering will dominate the coming decades. The fundamental lubrication science might very well be influenced by "life"; but the real down to earth lubrication engineering will remain a full contact sport with all the rapid changes ripping through the transportation and energy systems.

***Sustainability is at the top of everyone's agenda. How is Nynas incorporating this into its activities, product development and company culture?***

In several ways, I would say. Nynas has taken the lead developing and offering a high performance bio based fully renewable hydrocarbon for electrical transformers which is starting to receive approvals and to be used from OEMs and utilities around the world. We have also developed a biobased product for tyre and rubber which is support major industry players to achieve their sustainability goals.

***Given the pace of change in our industry, is this the most challenging or the most exciting time to be a chemist/engineer?***

I am a positive person, and I sense a lot of excitement across the industry. As I have worked with sustainability in one way or another right from the start back in 1998 with biodegradable total loss lubricants, I have seen this wave of change a long time coming. Some companies and institutions are better prepared than others. So, for some, exiting, and for others more challenging.

***How much have you missed the live events within our industry? How have you kept your focus and positivity throughout this difficult time?***

Well, honestly, I have missed these more than I would like to admit... I really enjoy the open and curious face of our industry, how many people share that excitement about technology and the willingness to teach and to learn. The digital media has so many limitations... no real connection, way too little feedback compared to what you get from a real-life presentation or lecture. I have tried to participate and contribute in various ways and forms, live streamed and recorded, but I am not very happy about the result... but we soldier on.

***What other career path might you have chosen if not this one?***

Ah, interesting! My favourite things are science, teaching and music. As I am very active in the first two, I would then answer music. Early music, medieval to baroque, perhaps. Playing old instruments, singing. Yes, I could have done that. (I am doing a bit of that as a hobby, but not as a career :)

***What would your advice be to young students considering their future career path?***

Get in there and get involved. Pick a topic that you are excited about (remember, you might very well get what you wish for, so wish wisely!). Study and work hard so you get good at it. The applied sciences offer a wealth of opportunity for everyone to make a real contribution, so your work will be appreciated and valuable.

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