An important high volume demand for graphene oxide (GO) is now emerging within the oil and gas industry, creating an urgent need for industrial scale production. Abalonyx has already in 2012 developed and verified a production process$^1$ which is now being scaled up further in collaboration with Kongsberg Innovation in Norway. An annual capacity of 8 tons is targeted to be reached this year, aiming at an annual production of 1000 tons in 2016.

Graphene Oxide is traditionally prepared by the method of Hummers and Offeman$^2$, but with the recent interest in graphene and graphene derivatives, several modifications of the method of Hummers and Offeman, as well as novel methods have been announced. The Abalonyx process has been developed with focus on safety, environmental sustainability, scalability and cost efficiency.

The Abalonyx process has been optimized in order to avoid formation of toxic fumes and to minimize waste. In the first stage, a 1 Kg batch reactor will be set up, followed by a 6 Kg batch reactor. The 6 Kg batch reactor will be fully automated to be run 4 cycles per 24 h. The end product is an aqueous 30 % GO-paste that can safely be stored and transported.

References