Processable E-Graphene to Unleash the Potential of Graphene in Bulk Applications

Dr. Martin R. Lohe

Sixonia Tech GmbH, 01187 Dresden, Germany

mlohe@sixonia-tech.de

Sixonia Tech is a technology-driven startup company based in Germany, spun-out of the Chair for Molecular Functional Materials at Technical University of Dresden. Our core technology is the production and functionalization of large-flake, few-layer graphenes and its processing into various formulations.
By providing good scalability and yield, low production costs and a good processability, our mission is to unleash the currently limited potential of graphene in various fields. Our E-Graphene can be functionalized to meet various processing requirements and thus be tailored for perfect interaction with your desired matrix system. Compared to other "graphene" products, E-Graphenes show a superior combination of tailorable properties within a single material, such as large flake-size in the µm-range, low thickness in the range of 1-10 layers and good processability. Unlike in GO, the defined functional groups can provide an improved processability, while still maintaining a good electrical conductivity and reasonable sheet size.

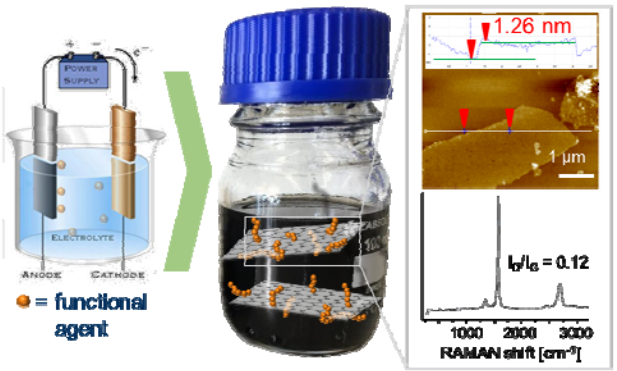

Figure 1: Surfactant-free aqueous dispersion of functionalized high-quality few-layer graphene.

As an example, E-Graphenes can be functionalized to be dispersible in water without the need for surfactants, while still maintaining an intrinsic conductivity that is orders of magnitude higher than that of commonly used reduced graphene oxide (rGO) materials.

Figure 2: Customizable conductive inks and high viscosity formulations based on our advanced E-Graphenes.

Via the simultaneous electrochemical production and functionalization, we are able to provide a new generation of processable, yet high quality few-layer graphenes. The scalable and eco-friendly process technology opens up new possibilities and prospects for the applications graphene, in the field of inks, composites, sensors, energy storage and energy conversion. We can help you to identify the most suitable graphene for your application and process it into a form that will avoid any problems during its integration into your desired application.

References

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