Graphene-Assisted Lipid Bilayer: A Synthetic Cell Model
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Introduction: Bio-compatibilized G/GO/RGO composite structures with embedded stearic acid on a bilayer structure model, biomimicking the cellular lipid bilayer are introduced through successive models.

Computational Methods: The solvent accessible surface of the models (van der Waals surface) and the related MD values were imported from Molecular Dynamics through MATLAB® studies, using LiveLink™ for MATLAB®. Within the modeling, simulation and validation of the graphene-assisted-lipid bilayer were used as well: COMSOL Multiphysics®, CFD, Semiconductor and Particle Tracing modules.

Conclusions: Beyond a biomimetic synthetic interface for personalized bio-info-applications this model brings a real size-shape relationship between the organic and inorganic nanostructures at this scale, with the size related Physics (Quantum and Bio-Quantum) proper consideration.

References: