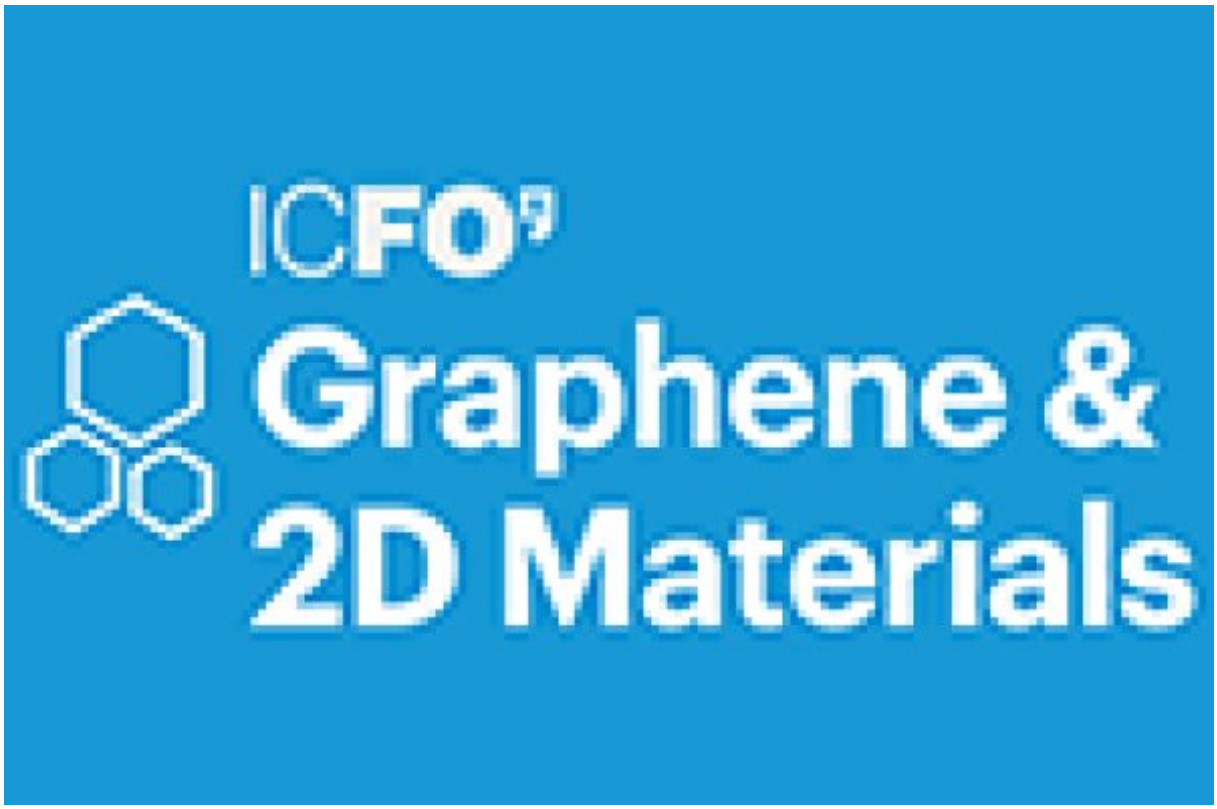

CVD Graphene for healthcare: Combining Diagnostic and Therapeutic Actions in a Smart Bandage

VINCENT BOUCHIAT

October 03, 2018

12:00

Seminar Room

After a decade and thousands of publications, graphene produced by CVD on copper foils remains at the sweet spot for quality and cost-effective production of large size, high-mobility, graphene on insulator monolayers. I will present the use of this technology for biological and medical applications from both the academic and industrial point of view. In particular I will be insisting on the possibility to combine therapeutics (biostimulation,

healing) and diagnostics (biosensing) features in the same device. To explore more that possibility, I will show results of in-vitro cellular growth (neurons and skin fibroblasts) on graphene-covered glass which shows the stimulation of growth and migration of cells promoted by the graphene substrate together with the possibility of probing their activity down to the sub-cellular scale.

Following these properties, we have elaborated a graphene-based scaffold that looks like a very thin, transparent plaster integrated in commercial bandage that is indented to be applied in direct contact with an open wound. We believe these films will have some impact in healthcare, as they target some important and poorly addressed diseases. I will present the preclinical results on animal studies and the perspectives of their commercial use for wound-care, in particular in the treatment and diagnostics of chronic wounds that affect the diabetics and eldery.

Wednesday, October 3, 2018, 12:00. ICFO's Seminar Room

Hosted by Prof. Adrian Bachtold