

Networks of two-dimensional materials for electronic applications

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Two-dimensional materials are considered as potential candidates for flexible electronic applications, due to their outstanding electrical and mechanical properties shown so far.

In particular, devices fabricated through printed techniques can be an intriguing option, where networks of flakes could represent the constituting layers of the devices such as the channel, the dielectric and the contacts.

The physics behind is however far from being understood so that numerical simulations based on a multi-scale approach could represent the only tool in order to shed a light on the main mechanisms at play.

In this talk, we will provide a detailed analysis of the performance to be expected in printed devices through numerical simulations.

At the same time, we will also present an overview of experimental results based on networks of two-dimensional materials.

Figures

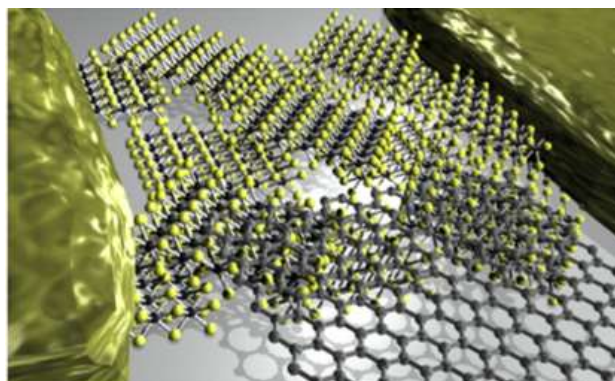


Figure 1: Networks of two-dimensional materials between two metallic gates

Figure 2: Simulated charge transport in a network of flakes for different applied biases

