

**From atoms to devices:
A multi-scale approach for the simulation of
2D-material based devices**

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Abstract: Two-dimensional materials (2DMs) are considered as promising candidates for a wide range of electronic applications due to their extreme thinness, flexibility, transparency and exceptional electronic properties. Fabrication of 2DMs-based devices is still at an embryonic stage, and simulations can provide relevant information regarding the ultimate performance to be expected in such devices. In this talk, we will first introduce the adopted multi-scale approach and we will then provide physical insights on the effects playing in ultra-scaled transistors, and to assess their performance against Industry requirements.