



Nanomaterials for smart electronics and sensing

I. Polioudakis ^{1#}, A. Papadopoulou ¹, D. Kosmidis ¹, S. Spinthaki¹, and G. Deligeorgis ^{*1}

¹ Institute of Electronic Structure and Laser, 2D and Carbon electronics, Heraklion 70013, Greece

²Univ of Crete, Physics Dpt, Heraklion 71500, Greece

Presenting author: XXX, email:polioud@iesl.forth.gr

* Corresponding author: XXX, email:deligeo@iesl.forth.gr

ABSTRACT

Nanomaterials such as atomically thin 2D materials hold significant promise as far as the next generation of electronic devices is concerned. Monolayer MoS₂, with a band gap of 1.8 eV and an electronic mobility up to 400 cm²/Vs at room temperature is the most promising member of the transition metal dichalcogenide family [1] and appears to be a great candidate for electronics such as transistors. However, other 2D materials hold great promise as sensors. Furthermore, after several years critical problems have been addressed and Carbon Nanotubes (CNTs) are re-surfacing as potential candidates [2] for even faster electronics that can be both flexible and offer high speed performance able to address telecommunications.

REFERENCES

- [1] Wang et al, Nature Nanotechnology, 7, 699–712 (2012)
- [2] Rutherglen et al, Nature Electronics, 2, 530-539 (2019)