Russell Berrie Nanotechnology Institute
Technion - Israel Institute of Technology

Prof. Frank Koppens

ICFO – The Institute of Photonics Sciences (Barcelona)
ICREA
BIST – The Barcelona Institute of Science and Technology

"Nano-lego for light"

Wednesday,
31 October 2018

12:00 refreshments
12:30 lecture

Wang Auditorium
The Dalia Maydan Building
Faculty of Materials Science and Engineering

RBNI Monthly Seminar Series 2018

TECHNION
Israel Institute
of Technology

Nano-lego for light

Frank Koppens
ICFO – The Institute of Photonics Sciences (Barcelona)
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We discuss 2D-material heterostructures as nano-lego for light. In particular, we will show nano-optoelectronic devices that demonstrate the exciting properties of 2D polaritons[2,3,4,5,6], such as plasmon, phonon and exciton polaritons. We challenge the limits of quantum light-matter interactions and study the fundamental limits of optical field confinement, down to the length-scale of single atoms[2]. Some device applications, such as detectors for infrared and THz light will also be shown.

References

1. Polaritons in layered two-dimensional materials. Low et al., Nature Materials (2017)
2. Probing the ultimate plasmon confinement limits with a van der Waals heterostructures. Alcarez et al., Science (2018).
3. Tuning quantum non-local effects in graphene plasmonics. Lundeberg et al., Science (2017)
4. Electrical 2pi phase control of infrared light in a 350-nm footprint using graphene plasmons. A. Woessner et al., Nature Photonics (2017)

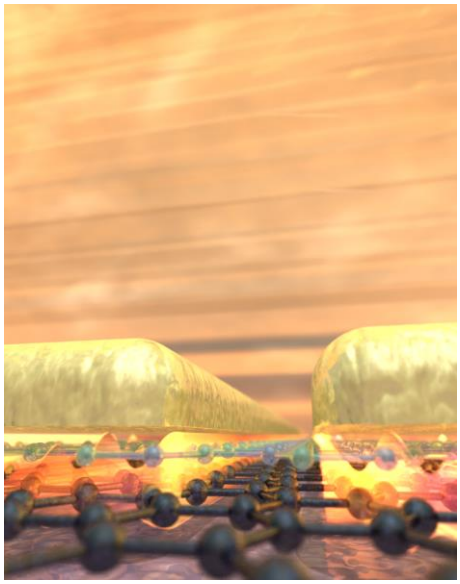

Image by Fabien Vialla