

Tuesday, October 31st 2017 - 13h00

Auditoire Stückelberg

Ecole de physique

Coffee and tea will be available from  
12h50 at the entrance of the Auditoire

# Forum DQMP

## How to transfer an invention to the market?

**<R&D | Unitec | R&D> = Innovation**

*Charlyne Gaidier-Rabe and Julien Levallois (Unitec)*

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## Magneto-optical properties of high-quality graphene

*Ievgeniia Nedoliuk (group of Prof. van der Marel)*

Apart from being strong and highly conductive, graphene also has supreme magneto-optical properties. Theoretical calculations predict magneto-optical absorption in a graphene monolayer to be very large compared to other materials, in fact the value of its absorption may approach 50%, a fundamental limit for thin films. However in experiments performed so far, magneto-optical absorption of graphene was several orders of magnitude lower. This puzzling result was often attributed to the low quality of graphene crystals or inadequacy of theoretical calculations. At the same time measuring magneto-optical spectra of high-quality samples was not feasible until now which did not allow clarifying properties of graphene. Here we present infrared magneto-optical transmission spectra of high-quality hBN-encapsulated graphene and newly developed setup which allowed to perform these measurements. We report high values of graphene's magneto-absorption (up to 36% in a monolayer). Apart from that, we have also observed several spectral features which were not predicted by theoretical models proposed so far.

**Forum Committee** : C. Lichtensteiger, N. Ubrig, A. Tamai (23.10.2017)