



Séminaire

Mardi 12 décembre 2017 à 10h30

Salle de réunion LSI_ bâtiment 83

Ecole polytechnique

Ultrafast dynamics of excitons and charge carriers in semiconductor nanocrystals probed by femtosecond optical spectroscopy

The development of ultrathin two-dimensional (2D) semiconductor nanostructures have generated considerable interest over the past years. Among these nanostructures, colloidal semiconductor nanoplatelets have a thickness controlled with atomic precision (defined number of monolayers) which leads to strongly tunable and exceptionally narrow optical features [1]. The recent development of II-VI semiconductor heterostructures of various shapes and compositions has allowed to access new optical properties [1]. Here we use femtosecond transient absorption spectroscopy to study the ultrafast dynamics of excitons and charge carriers in CdSe-CdTe core-crown nanoplatelets [2].

We will also present the current progress in the development of a new two-dimensional electronic spectroscopy setup operating in the visible and ultra-violet range to investigate the sub-100 fs dynamics of colloidal nanocrystals after optical excitation well above the bandgap of the semiconductor nanostructures[3].

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References

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