

LMX Special Seminar 9 April 2018

OFLG/402 16:00 – 17:00

Guest Speaker Prof. Majed Chergui

Contact: Prof. T. Lippert, Thin Films & Interface Group

Spectroscopy and photoinduced charge carrier and phonon dynamics in transition metal oxides

Prof. Majed Chergui

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I will present the results of our recent studies on transition metal oxides (TMO). In particular, the identification of a novel 2-dimensional exciton in the 3D lattice of anatase TiO_2 . This result was obtained by a combination of advanced tools: ultrafast 2-dimensional deep-UV spectroscopy, spectroscopic ellipsometry, angle-resolved photoemission spectroscopy and many-body calculations. I will then show how the deep-UV excitonic transitions of TMOs such as anatase TiO_2 or ZnO can be exploited as signatures of interfacial electron transfer and compare this approach to time-resolved X-ray spectroscopy. I will discuss more recent studies on strain control of the exciton in anatase TiO_2 . Finally, I will conclude with a short presentation of future projects on Cobalt and Magnesium oxides.