

***Electrical Sciences and Computer Engineering (ESCE) Seminar*****Direct look at charge, lattice and spin dynamics in solids with
ultrafast terahertz spectroscopy****Dr. Dmitry Turchinovich**

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Abstract:

Abstract: Ultrafast terahertz spectroscopy allows one to observe the dynamics of charge, lattice and spin in solids on the most elementary timescale: in the regime $\omega\tau \approx 1$, where ω is the electromagnetic wave oscillation frequency, and τ is the characteristic sub-picosecond timescale at which the effects like electron momentum scattering, lattice oscillation, and spin precession occur. In this presentation, after a brief introduction, we will review two recent case studies from my group: ultrafast electron transport in graphene [1,2], and fundamental observation of spin-controlled conduction in ferromagnetic metals [2].

References:

- [1] Z. Mics et al., "Thermodynamic picture of ultrafast charge transport in graphene," Nature Commun. 6, 7655 (2015)
- [2] I. Ivanov et al., "Perspective on terahertz spectroscopy of graphene," EPL 111, 67001 (2015)
- [3] Z. Jin et al., "Accessing the fundamentals of magnetotransport in metals with terahertz probes," Nature Phys. 11, 761 (2015)

Friday, June 10, 2016**11:00 AM****B&H Room 751***Coffee served at 10:30 AM*