

Palestra

Segunda-feira, 7 de Maio de 2018, 17h00

Anfiteatro Abreu Faro, Complexo Interdisciplinar, IST, Lisboa

Nanoscale Communications

Pawel Kulakowski

(Prof., AGH University of Science and Technology, Krakow, Poland)

RESUMO

The talk will discuss the possible means for nanocommunications, i.e. communication between future nanomachines. An overview of possible approaches will be given, including miniaturization of existing communication devices, building nanomachines from basic blocks and molecular communication motivated by the communication mechanisms already existing in biology. The talk will later focus on the phenomenon of FRET (Foerster Resonance Energy Transfer). FRET can provide viable communication means on nano-distances with propagation delays of few nano-seconds only. The theory of FRET will be introduced, followed by a report on experiments on its performance performed in the last few years. The last part of the talk will present some further simulation studies, showing possible applications of FRET-based nanocommunication.

BIO



Pawel Kulakowski (kulakowski@kt.agh.edu.pl) received a Ph.D. in telecommunications from the AGH University of Science and Technology in Krakow, Poland, in 2007, and currently he is working there as an assistant professor. He spent about 2 years as a post-doc or a visiting professor at universities in Spain, specifically at Technical University of Cartagena, University of Girona, University of Castilla-la Mancha and University of Seville. He co-authored about 30 scientific papers, in journals, conferences and as technical reports. He was involved in numerous research projects, especially European COST

Actions: COST2100, IC1004 and CA15104 IRACON, focusing on topics of wireless sensor networks, indoor localization and wireless communications in general. His current research interests include molecular communications and nanonetworks. He was recognized with several scientific distinctions, including 3 awards for his conference papers and a governmental scholarship for young outstanding researchers. Since 2011, he is an Executive Editor in Transactions on Emerging Telecommunications Technologies.