



ZAJEDNIČKI SEMINAR

17. prosinac 2014. (srijeda) u 11:00 sati (točno)
PMF-fizika, Bijenička cesta 32, Predavaonica 201

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A long journey in a tiny hole

In this talk, I will give a brief introduction of a newly emerging single-molecule technique, nanopore biosensing. First, I would like to start with the 20 years history of nanopore research including biological nanopores as well as solid state nanopores. Then, based on the efforts have been done in the lab, I will discuss the merits of this high throughput methodology compared to other single molecule techniques. Last, I will focus on my recent efforts on ultrathin nanopore membranes based on 2D materials, especially molybdenum disulfide (MoS₂) to elaborate promising potentials for various applications (e.g., DNA nanopore sequencing).

References

[1] *Detecting the translocation of DNA through a nanopore using graphene nanoribbons*

F. Traversi, C. Raillon, S. M. Benameur, K. Liu, S. Khlybov, M. Tosun, D. Krasnozhan, A. Kis and A. Radenovic

Nature Nanotechnology **8**, 939–945 (2013)

[2] *Atomically thin molybdenum disulfide nanopores with high sensitivity for DNA translocation*

K. Liu, J. Feng, A. Kis, & A. Radenovic, ACS Nano **8**, 2504-2511 (2014)

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Ke Liu is currently a senior postdoc researcher in the laboratory of nanoscale biology (LBEN), EPFL, Lausanne, Switzerland. His main topic is to exploit the atomically thin 2D materials to reach ultimately single base resolution towards nanopore DNA sequencing.