



KEMIJSKI INŠTITUT

Vabilo na Preglov kolokvij / Invitation to the Pregl colloquium

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Velika predavalnica Kemijskega inštituta /
Great Lecture Hall, National Institute of Chemistry;
Hajdrihova 19, Ljubljana

Harnessing nanopores for single-molecule enzymology and protein sequencing

Biological nanopores are a class of membrane proteins that form nanometer-size apertures on lipid membranes. Under an applied potential the ionic current through nanopores is used to identify molecules or to follow reactions at the single-molecule level. Nanopores current are advantageous because they are easily integrated into low-cost and portable analytical devices.

Here we show that the transport of proteins and peptides across nanopores can be finely controlled. Folded proteins can be trapped inside nanopores by exploiting electrophoretic forces, while small peptides can be stretched and unfolded by engineering strong electroosmotic flows through the nanopore. Using these approaches, nanopores may be used as nanoscale reactor for single-molecule enzymology studies, or sensors for sequencing individual proteins as they translocate across the nanopore.

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Vljudno vabljeni / Kindly invited