

Ciclo di incontri – Tavolo di discussione

BIOLOGICAL CHANNELS AS NATURAL TEMPLATES FOR NANODEVICES

Bob Eisenberg

Department of Molecular Biophysics & Physiology, Rush University

Biological channels are well defined devices with robust input output relations determined by:

- (1) Gating: the on-off behavior of single channel proteins;
- (2) Permeation: what goes through the narrow pore once it is open;
- (3) Controls of gating: separate nanosensors that detect chemicals, voltage, stretch, etc., by controlling the parameters of single channel gating.

These properties are not automatic physical properties of narrow channels. Rather evolution has chosen a combination of permanent charge density (from specific chemical properties of acid and base side chains of proteins); polarization charge (crudely described by local dielectric constant); shape of the pore; (perhaps) changes of the shape of the pore.

Physical scientists might follow evolution by choosing properties of nanosensors that produce useful robust device equations.

**Lunedì 4 Novembre 2019 – Ore 14.30 – Sala Videoconferenze
Dipartimento di Ingegneria Meccanica e Aerospaziale
Via Eudossiana 18, Roma**

Per ulteriori dettagli contattare il Prof. Alberto Giacomello:
alberto.giacomello@uniroma1.it



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