



*University of Nova Gorica, Graduate School*

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## **INVITATION TO THE LECTURE**

*entitled*

### **PREPARATION OF SUPPORTED LIPID MEMBRANES WITH ENZYMES FOR APPLICATION IN BIOSENSING**

**dr. Zoran Arsov**

*Condensed Matter Physics, Jožef Stefan Institute, Ljubljana*

**Thursday, May 31<sup>st</sup> 2007 at 15:00**

*Lecture hall 201 of the School of Environmental Sciences,  
Via Croce 3, Gorizia, Italy*

*Deposition of lipid vesicles on solid supports is a way of preparing supported lipid membranes. Their formation on different substrates can be followed by atomic force microscopy (AFM). It is important to characterize structure, i.e. lateral heterogeneity, of membranes because it can have influence on the formation of supported membranes and on lipid-protein interactions. The characterization can be done by electron paramagnetic resonance (EPR) with spin-labeling or attenuated total reflection Fourier transform infrared (ATR-FTIR) spectroscopy, while they have appropriate spatial and time scales.*

*The functional significance of lateral heterogeneity of biological membranes is in the ability of membranes to respond more effectively to external stresses. As an example, the influence of membrane heterogeneity of bovine erythrocyte ghosts on the activity of membrane-bound enzyme acetylcholinesterase (AChE) will be presented.*

*Supported lipid membranes with included proteins can serve as biological sensing elements in biosensors. The immobilization of membrane-bound proteins through supported membranes avoids the necessity of protein isolation, purification, and reconstitution, which can lead to denaturation or deactivation. An example of supported membranes containing enzyme acetylcholinesterase from erythrocytes will be shown. Their formation was followed by surface plasmon resonance (SPR).*

**Kindly invited!**