



VABILO NA PREGLOV KOLOKVIJ /  
INVITATION TO THE PREGL COLLOQUIUM

**Prof. Fritz B. Prinz, PhD**

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**Petek, Friday, 29. 8. 2014, ob / at 13:00**

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

**NANO STRUCTURING FOR EFFICIENT  
ENERGY CONVERSION**

Recent advances in nanoscale materials research have created exciting opportunities for efficient energy conversion. Engineering matter at the nanoscale allows us to exploit a variety of classical and quantum mechanical properties which are inaccessible at larger scales, including high electric field gradients, high surface-to-volume ratios, quantum confinement, and low dimensionality. By tuning these properties it is possible to control the interaction between photons, electrons, ions, and molecules in a variety of next-generation devices. This talk will provide an overview of research related to energy conversion efficiency through the manipulation of materials at the nanoscale. Examples will be provided on how nanostructuring can optimize charge transport, light absorption, and reaction kinetics. Particular emphasis will be put on phenomena that enable (1) optimizing light absorption through quantum confinement as well as (2) enhancing reaction kinetics via grain boundary refinement.

**Vljudno vabljeni! / Kindly invited!**