

**International Research Training Group I524**

**Self-Assembled Soft-Matter Nanostructures at Interfaces**

**– Colloquium –**



**Friday, July 17<sup>th</sup>, 2015, 11.00 h**

**MPIKG Potsdam  
Theory Seminar room  
Am Mühlenberg 1, 14776 Potsdam (Golm)**

**Prof. Dr. Maurício S. Baptista**

Department of Biochemistry, Instituto de Química, Universidade de São Paulo, Brazil

**„Photoinduced programmed cell death: understanding the effect of visible light on skin and improving Photodynamic Therapy (PDT) protocols“**

Natural and synthetic photosensitizers (PS), after electronic excitation, induce several chemical reactions that damage biomolecules and can cause cell death. By looking at natural photosensitizers, which are present in the skin and hair, we have been understanding the role of different damages triggered by UVA and visible light. We will describe in greater detail the role of melanin photosensitization on the damage in nuclear DNA of skin cells. Also by tailoring the structure of synthetic PS, we can develop ways to inflict damage in defined cellular targets and consequently to induce specific mechanisms of programmed cell death. I will show that parallel damage in the membranes of mitochondria and lysosomes cause mainly autophagic cell death. These concepts will be proven at the molecular level by using membrane mimetic systems and computer simulations. By using this knowledge we aim to develop more robust PDT photosensitizers.

We cordially invite everybody who is interested.

**Prof. Dr. Martin Schoen**

IGRTG I524 Chairman

<http://www.ssni.tu-berlin.de>

**Dr. Rumiana Dimova**

Contact Person

[rumiana.dimova@mpikg.mpg.de](mailto:rumiana.dimova@mpikg.mpg.de)



TRIANGLE  
MRSEC

Materials Research Science  
and Engineering Center

**NC STATE UNIVERSITY**



THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL



**Penn**  
UNIVERSITY of PENNSYLVANIA