



## **PhD Workshop on Bioelectrochemistry and Bioanalysis**

November 20-21 2014: Hotel Märkischer Hof, Poststrasse 8, 14943 Luckenwalde, Germany

### **Thursday, Nov 20th 2014**

**9.50** Opening Fred Lisdat (TH Wildau) / Frieder Scheller (IZI/UP)

#### **Session 1**

*Chair: Johannes Tanne (IZI)*

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| <b>10.00</b> | <b><u>Dr. Beate Strehlitz</u></b><br>Helmholtz-Zentrum für<br>Umweltforschung<br>Leipzig | Development and application of DNA aptamers  |
| <b>10.30</b> | Viola Schwuchow<br>(UP)  | Periplasmic aldehyde oxidoreductase (PaoABC) - Characterization of a molybdo-flavoenzyme from Escherichia coli     |
| <b>10.45</b> | Alessandro Foti<br>(UP)  | Studies on the Inhibition of Aldehyde Oxidase by xenobiotics   |
| <b>11.00</b> | Marlitt Stech<br>(IZI)   | Investigations on the cell-free synthesis of single-chain antibody fragments using a eukaryotic translation system |
| <b>11.15</b> | Sarah Schumacher<br>(IZI)  | Detection of Drug Abuse via Immunoassay  |
| <b>11.30</b> | Christopher Schulz<br>(Lund University)  | Cellobiose dehydrogenase – a promising enzyme for biosensing applications  |

**11.45** **Lunch**

#### **Session 2**

*Chair: Thomas Dietz (University of Potsdam)*

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|--------------|--|---|
| <b>13.10</b> | <b><u>Dr. Peter Crowley</u></b><br>National University of<br>Ireland | Protein Assembly Mediated by Small Molecules  |
| <b>13.40</b> | Kai Stieger<br>(TH Wildau)   | Reinventing photosynthesis: biohybrid photocurrent generation based on photosystem I in 3D mono- and multilayer architectures |
| <b>13.55</b> | Christoph Wettstein<br>(TH Wildau)                                   | Interaction of Fructose Dehydrogenase with the Redox Protein Cytochrome c and the Sulfonated Polyaniline PMSA1                |

**14.10** **Coffee**

#### **Session 3**

*Chair: Kai Stieger (TH Wildau)*

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|--------------|---|---|
| <b>14.50</b> | <b><u>Prof. Dr. Lo Gorton</u></b><br>Lund University,<br>Sweden | Electrochemical Communication between Bacterial Cells and Electrodes  |
| <b>15.20</b> | Johannes Tanne<br>(IZI)   | Bioelectrocatalysis of Cellobiose dehydrogenase on MWCNT-Polyanilin modified gold electrodes  |
| <b>15.35</b> | Ting Zeng<br>(UP)   | Miniature direct electron transfer based sulphite/oxygen enzymatic fuel cells   |
| <b>15.50</b> | Vitali Scherbahn<br>(BTU Cottbus/<br>TH Wildau)                 | Biofuel cell development based on modified carbon nanotube materials and direct enzyme-electrode contacts using PQQ-dependent glucose dehydrogenase/bilirubin oxidase |

16.05	Coffee	
<b><u>Session 4</u></b>		
<i>Chair: Marlitt Stech (IZI)</i>		
16.40	<b><u>Prof. Dr. Gunther Wittstock</u></b> University of Oldenburg	How passive is passive? Investigation of functional layers on implants, batteries and biochips by scanning electrochemical microscopy
17.10	David Sustr (IZI)	A FRAP-based evaluation of cytochrome c diffusion in polyelectrolyte multilayers
17.25	Saustin Dongmo (University of Oldenburg)	Detection of hydrogen peroxide and superoxide radical during electrocatalysis of oxygen reduction on quinone-containing polymer-modified electrode
17.45	<b>Dinner</b>	
19.00	<b>Social Event</b>	

## Friday, Nov 21th 2014

### **Session 5**

*Chair: Viola Schwuchow (University of Potsdam)*

09.30	<b><u>Prof. Dr. Robert Bittl</u></b> FU Berlin	Electron paramagnetic resonance spectroscopy in protein biophysics
10.00	Sascha Lehnort (UP)	Binding studies of the anti-ATP DNA aptamer under homogeneous and heterogeneous conditions
10.15	Jens Fischbach (TH Wildau)	Use of simple isothermal assays for real-time and endpoint detection of phytopathogenic microorganisms
10.30	Marc Riedel (TH Wildau)	Optimization and characterization of a impedimetric DNA sensor: Influence of target length and recognition sequence position on the impedance signal
10.45	Sandra Mükusch (IZI)	Peptide Microarrays for post-translational Modifications

11.00 **Coffee**

### **Session 6**

*Chair: Jens Fischbach (TH Wildau)*

11.35	<b><u>Victoria Schuldt</u></b> (Fraunhofer IZM Berlin)	Microintegration of sensors and actuators into lab-on-a-chip systems for biological applications
11.50	Thomas Schmelzer (TH Wildau)	Subclones of the human neuroblastoma cell line SH-SY5Y
12.05	Rita Sachse (IZI)	Characterization and functionalization of biological membranes derived from eukaryotic cell-free systems

12.20 **Closing remarks (Fred Lisdat and Frieder Scheller)**

**Lunch**