

Destructive interactions of free radicals, especially of free oxygen radicals (FOR's) with bonded molecules and materials are studied to get more insight into the specificity of these interactions. The innovative idea behind this project is to exploit electrochemical approaches to study free radical reactions in detail. A second important new idea is to use these systems for the study of antioxidants. A third novel application will be the detection of FOR's in biological material. The final goal will be to develop the means to detect FOR's in living systems for in-vivo monitoring.

#### Conference chair:

Professor Dr. Fritz Scholz (Greifswald)

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Alfried Krupp

Wissenschaftskolleg Greifswald

## Interaction of Free Oxygen Radicals with Molecules Immobilized on Electrode Surfaces

International conference of the  
Alfried Krupp Graduate School  
„Studies of the interaction  
of free oxygen radicals with  
molecules at electrodes and  
applications to biochemical and  
medical systems“

October 22 – 23, 2009

## Thursday, October 22, 2009

18.00 – 18.15

### Welcome address

Fritz Scholz (Greifswald)

Bärbel Friedrich (Greifswald)

18.15 – 19.00

### Electrochemical Studies of the Interaction of Free Oxygen Radicals with Compounds on Electrode Surfaces

Fritz Scholz (Greifswald)

19.00 – 19.45

### Formation and Characterization of Polyelectrolyte Brushes

Christiane Helm (Greifswald)

19.45

Discussion/resumé

20.00

*Conference dinner*

*(Restaurant 'Alter Fritz')*

## Friday, October 23, 2009

9.00 – 9.45

### Control of Colloidal Stability by Oppositely Charged Polyelectrolytes

Michal Borkovec (Geneva)

9.45 – 10.30

### Specific Surface Energies of Solid Electrodes: Theory and Measurement

Göyöz Láng (Budapest)

10.30 – 10.45

*Coffee break*

10.45 – 11.30

### Electron Transfer and Protein Dynamics of Redox Proteins at Interfaces

Peter Hildebrandt (Berlin)

11.30 – 12.15

### Radicals in Innate Immune Defence

Robert Jack (Greifswald)

12.15 – 13.15

*Lunch break*

13.15 – 14.00

### Electrochemical Investigation of Redox Reaction Mechanisms of Organic Compounds and Complexes

Jiří Ludvík (Prague)

14.00 – 14.45

### The Application of Quartz Crystal Nanobalance in Electrochemistry

György Inzelt (Budapest)

14.45 – 15.30

### The Basics of Pancreatitis

Frank Ulrich Weiss (Greifswald)

15.30 – 16.00

*Coffee break*

16.00 – 16.45

### The Role of Peroxiredoxins and of the local RAAS in Maintaining Beta Cell Function

Reinhard Walther (Greifswald)

16.45 – 17.30

### Analytical Application of the Electrochemical Assay to Quantify FORs and Radical Scavenging Activities

Heike Kahlert (Greifswald)

17.30

Discussion/resumé

19.00

*Closing party*

*(Institute of Biochemistry)*