

**INTERNATIONAL CONFERENCE**  
**BIOSENSING AND BIODYNAMICS: FROM BASICS TO APPLICATIONS**  
18-21 May 2006

**ICBB 2006**

**PROGRAM**

**FIRST MEETING OF THE INTERNATIONAL ADVISORY BOARD OF ICB**

Date: Thursday, May 18, 2006, 16:<sup>30</sup> – 18:<sup>30</sup>

Venue: NEW ICB BUILDING, Street Intrarea Portocalelor, No 1 B, Bucharest 6

**OPENING CEREMONY**

Date: Friday, May 19, 2006, 9:<sup>00</sup> – 10:<sup>00</sup>

Venue: NEW ICB BUILDING, Street Intrarea Portocalelor, No 1 B, Bucharest 6

Speakers (alphabetic order):

- Anton ANTON, President of the National Authority for Research, Representative of Romanian University Research Council, Romania
- Eugen GHEORGHIU, Director, International Centre of Biodynamics, Bucharest, Romania
- Ionel Haiduc, President, Romanian Academy, Romania
- Julia Hasler, Division of Basic and Engineering Sciences, UNESCO, Paris, France
- Ioan PANZARU, Rector, University of Bucharest, Romania

Coffee Break: 10:<sup>00</sup> – 10:<sup>15</sup>

**Opening Lecture:** Date: Friday, May 19, 2006, 10:<sup>15</sup> – 11:<sup>00</sup>

**Chair:** Jean Louis MARTY, Perpignan University, France

Anthony TURNER, Cranfield University at Silsoe, UK, “**Bioanalytical Systems for Food Safety and Environmental Security**”

**Bridges across the Ocean:**

Date: Friday, May 19, 2006, 11:<sup>00</sup> – 11:<sup>30</sup>

**Chair:** Eugen GHEORGHIU, International Centre of Biodynamics, Romania

Speaker:

- 11:<sup>00</sup> – 11:<sup>30</sup>, Andrei RUCKENSTEIN, Co-director Institute for Quantitative Biology, Rutgers University, USA, “**Quantitative Biology: the new, cross-disciplinary paradigm**”

**NOVEL ANALYTICAL SYSTEMS (I)**

**Chair:** Anthony TURNER, Cranfield University at Silsoe, UK

Date: Friday, May 19, 2006, 11:<sup>30</sup> – 12:<sup>30</sup>

Venue: NEW ICB BUILDING, Street Intrarea Portocalelor, No 1 B, Bucharest 6

Speakers:

- 11:<sup>30</sup> – 12:<sup>00</sup>, Jean Louis MARTY, Perpignan University, France, “**Protein phosphatase biosensor: a dual tool for bacterial and marine toxins**”
- 12:<sup>00</sup> – 12:<sup>30</sup>, Marco MASCINI, University of Florence, Italy, “**Aptamers Ligands for Bioanalytical application**”

**LUNCH 12:<sup>30</sup> – 13:<sup>30</sup>,**

**NOVEL ANALYTICAL SYSTEMS (II)**

**Chair:** Marco MASCINI, University of Florence, Italy

Date: Friday, May 19, 2006, 13:<sup>30</sup> – 15:<sup>00</sup>

Venue: NEW ICB BUILDING, Street Intrarea Portocalelor, No 1 B, Bucharest 6

Speakers:

- 13:<sup>30</sup> – 14:<sup>00</sup>, Peter LIEBERZEIT, Institute of Analytical Chemistry, University of Vienna, Austria, **“Bioanalyte Detection by Artificial Recognition Elements based on Imprinting Techniques”**
- 14:<sup>00</sup> – 14:<sup>30</sup>, Erik REIMHULT, ETH Zurich, Switzerland, **“Novel surface architectures for electrochemical investigation and manipulation of lipid membranes”**
- 14:<sup>30</sup> – 15:<sup>00</sup>, Ralf RICHTER, Max Plank Institute for Metal Research and Heidelberg University Department of New Materials and Biosystems, Germany, **“Towards surface-based model systems of the pericellular coat”**

Coffee Break: 15:<sup>00</sup> – 15:<sup>20</sup>

#### **BIOSENSING: EMERGING APPLICATIONS (I)**

**Chair:** Yuri FELDMAN, Department of Applied Physics, The Hebrew University of Jerusalem

Date: Friday, May 19, 2006, 15:<sup>20</sup> – 18:<sup>30</sup>

Venue: NEW ICB BUILDING, Street Intrarea Portocalelor, No 1 B, Bucharest 6

Speakers:

- 15:<sup>20</sup> – 15:<sup>50</sup>, Thierry NOGUER Université de Perpignan BIOMEM, Centre de Phytopharmacie, France, **“Towards the development of an amperometric immunosensor for the determination of Ochratoxin A”**
- 15:<sup>50</sup> – 16:<sup>20</sup>, Johan ROBBENS, University of Anvers, **“New molecular techniques in Ecotoxicology for risk assessment: DNA-chip and cellular reporters”**
- 16:<sup>20</sup> – 16:<sup>50</sup>, Patrik WAGNER, University of Hasselt, Instituut voor Materiaalonderzoek – BIOS, Diepenbeek, Belgium, **“Affinity biosensing with polymer- and synthetic diamond-based platform materials”**
- 16:<sup>50</sup> – 17:<sup>20</sup>, Thorsten WOHLAND, National University of Singapore, **“Multi-color single-wavelength fluorescence cross-correlation spectroscopy for the investigation of protein interactions”**
- 17:<sup>20</sup> – 17:<sup>40</sup>, Nikolaj STARODUB, Palladin Institute of Biochemistry National Academy of Sciences of Ukraine, Department of Biochemistry of Sensory and Regulatory Systems Kiev, Ukraine, **“Optical and Electrochemical Biosensors for Express Control of Drinking Water, Food and Feed Quality”**
- 17:<sup>40</sup> – 18:<sup>00</sup>, Nadezhda PIVEN, Institute of Bioorganic Chemistry of National Academy of Sciences of Belarus, Minsk, Belarus, **“Biosensoric Control of Insulin AutoAntibodies”**
- 18:<sup>00</sup>-18:<sup>30</sup> Octavian POPESCU, Babes Bolyai University, **“Glyconectin To Glyconectin Interactions – A Pathway Leading To Multicellularity”**

#### **ANALYTICAL METHODS**

**Chairs:** Eberhard GERSING, University of Göttingen, Germany &

Koji ASAMI, Institute for Chemical Research, Kyoto University, Japan

Date: Saturday, May 20, 2006, 9:<sup>00</sup> – 11:<sup>30</sup>

Venue: NEW ICB BUILDING, Street Intrarea Portocalelor, No 1 B, Bucharest 6

Speakers:

- 9:<sup>00</sup> – 9:<sup>30</sup>, Koji ASAMI, Institute for Chemical Research, Kyoto University, Japan, **“Dielectric properties of biological cells and tissues: Monitoring and modeling”**
- 9:<sup>30</sup> – 10:<sup>00</sup> Yuri FELDMAN, Department of Applied Physics, The Hebrew University of Jerusalem, Israel, **“Dielectric Spectroscopy as a method for *in vitro* diagnostic and *in vivo* non-invasive continuous monitoring”**
- 10:<sup>00</sup> – 10:<sup>30</sup>, Eberhard GERSING, University of Göttingen, Germany, **“Application of Bioimpedance Spectroscopy for Tissue Characterization and Monitoring During Various Treatments”**
- 10:<sup>30</sup> – 11:<sup>00</sup>, Jan GIMSA, Biophysics Department, University of Rostock, Germany, **“General principles of AC-electrokinetics: effects, methods and medical applications”**

- 11:<sup>00</sup> – 11:<sup>30</sup>, Eugen GHEORGHIU, International Centre of Biodynamics, Bucharest, Romania, **“Biodysensing, Sensing through dynamics of (bio)interfaces & cellular platforms”**

Coffee Break: 11:<sup>30</sup> – 11:<sup>45</sup>

#### **COLLABORATION AVENUES**

Date: Saturday, May 20, 2006, 11:<sup>45</sup> – 12:<sup>45</sup>

Venue: NEW ICB BUILDING, Street Intrarea Portocalelor, No 1 B, Bucharest 6

Speakers :

- Anton ANTON, President of the National Authority for Research, Representative of Romanian University Research Council
- Julia Hasler, Division of Basic and Engineering Sciences, UNESCO, Paris
- Michal WITT, International Institute of Molecular and Cell Biology, Warsaw, Poland

Lunch Break: 12:<sup>45</sup> – 13:<sup>30</sup>

#### **BIOSENSING: EMERGING APPLICATIONS (II)**

Date: Saturday, May 20, 2006, 13:<sup>30</sup> – 16:<sup>00</sup>

**Chairs:** Gilbert M. RIOS, Institut Européen des Membranes, Montpellier, France & Constantin LUCA, University Politehnica of Bucharest, Romania

Venue: NEW ICB BUILDING, Street Intrarea Portocalelor, No 1 B, Bucharest 6

Speakers:

- 13:<sup>30</sup> – 14:<sup>00</sup>, Gilbert M. RIOS, École Nationale Supérieure de Chimie, Montpellier, Institut Européen des Membranes, Montpellier, France, **“Quo vadis...membrane engineering?”**
- 14:<sup>00</sup> – 14:<sup>30</sup>, Mihai BARBOIU, Institut Européen des Membranes, Montpellier, France, **“Hybrid Supramolecular Dynamic Membranes ”**
- 14:<sup>30</sup> – 15:<sup>00</sup>, Louis COT, UNESCO Chairholder, Ecole Nationale Supérieure de Chimie, Montpellier, France, **“New Horizons in Membrane Science”**
- 15:<sup>00</sup> – 15:<sup>30</sup>, Gabriel RACOVITEANU, Technical University for Constructions, Bucharest, Romania, **“Membrane Bioreactors in Water and Wastewater Treatment”**
- 15:<sup>30</sup> – 16:<sup>00</sup>, Mihaela GHEORGHIU, International Centre of Biodynamics, Bucharest, Romania, **“New avenues, “hot topics” in Biodysensing”**

#### **16:<sup>00</sup> – 18:<sup>00</sup>, ROUND TABLES ON SELECTED TOPICS**

#### **SATELLITE MINI SYMPOSIUM: BIOSENSING: BIODYNAMICS OF CELL MEMBRANES**

Date: Sunday, May 21, 2006, 9<sup>00</sup> – 13<sup>15</sup>

Venue: NEW ICB BUILDING, Street Intrarea Portocalelor, No 1 B, Bucharest 6

**Chairs:** Maria-Luisa FLONTA, Physiology and Biophysics Department, University of Bucharest & Paul Steels, Dept Medische Basiswetenschappen, Universiteit Hasselt, Diepenbeek, Belgium

Speakers (alphabetic order):

- 9<sup>00</sup>-9<sup>30</sup> Constanta GANEA, Carol Davila University of Medicine and Pharmacy **“Intraproteins charge transfers studied by SSM (Solid Supported Membrane) method”**
- 9<sup>30</sup>-10<sup>00</sup> Maria-Luisa FLONTA, Physiology and Biophysics Department, University of Bucharest **“Ion channels and beyond: the molecular mechanisms of pain perception”**
- 10<sup>00</sup>-10<sup>30</sup> Dan MIHAILESCU, Physiology and Biophysics Department, University of Bucharest **“A Common Pharmacophoric Footprint for AIDS Vaccine Design”**
- 10<sup>30</sup>-11<sup>00</sup> Patrick D’HAESE Department of Nephrology-Hypertension, University of Antwerp, Antwerpen, Belgium **“Validation and use of primary cultured renal cells to study statin transport by the human tubular kidney epithelium”**

11<sup>00</sup>-11<sup>30</sup> Coffee break

- 11<sup>30</sup>-12<sup>00</sup> Dana CUCU, International Centre of Biodynamics, Bucharest, Romania, **“The effect of cadmium on the Epithelial Na<sup>+</sup> Channel (ENaC) from kidney cells”**

- 12<sup>00</sup>-12<sup>25</sup> Paul STEELS, Dept Medische Basiswetenschappen (MBW), Universiteit Hasselt, Diepenbeek, Belgium “**Mechanisms of renal tubular cell death in ischemic acute renal failure: role of mitochondria in apoptosis and necrosis**”
- 12<sup>25</sup>-12<sup>50</sup> Ilse SMETS, Dept Medische Basiswetenschappen (MBW), Universiteit Hasselt, Diepenbeek, Belgium “**Reversal of mitochondrial Na/Ca exchangers in metabolically inhibited MDCK cells: confocal microscopic study of mitochondrial calcium and sodium**”
- 12<sup>50</sup>-13<sup>15</sup> Corina BALUT, International Centre of Biodynamics, Bucharest, Romania, “**Imaging mitochondrial and cytosolic pH in living MDCK cells subjected to metabolic inhibition**”

**ROUND TABLE: BIOSENSING AND BIODYNAMICS WHERE TO? & CONFERENCE CLOSURE** 13:<sup>30</sup> - 14:<sup>00</sup>

***Event Secretariat:***

Mihaela GHEORGHIU [mgheorghiu@biodyn.ro](mailto:mgheorghiu@biodyn.ro)

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***Mini symposium:*** Corina BALUT [cbalut@biodyn.ro](mailto:cbalut@biodyn.ro) & Daniela CUCU [dcucu@biodyn.ro](mailto:dcucu@biodyn.ro)

Time	Day 1 May 18	Day 2 May 19		Day 3 May 20		Day 4 May 21
8:45	Arrival of participants ↓					<b>SATE L I TE  S IMP OS  UM</b>
9:00		<b>OPENING CEREMONY</b>	E. Gheorghiu	<b>A N A L.  M E T H.</b>	K. Asami	
9:15			A. Anton		Y. Feldman	
9:30		I. Panzaru	J. Gimsa			
9:45		J. Hasler	E. Gersing			
10:00		Coffee break			E. Gheorghiu	
10:30		<b>Opening Lecture</b>	A. Turner		Coffee break	
10:45					J. Hasler	
11:00		<b>Bridges across the Ocean</b>	A. Ruckenstein		A. Anton	
11:15					M. Witt	
11:30		<b>ANALYTICAL. SYSTEMS</b>	M. Mascini			
11:45				11:45		
12:00			J.L Marty	12:05		
				12:25		
12:30		Lunch		Equipment presentations / Lunch		
12:45						
13:00						
13:30						
13:45		<b>ANALYTICAL. SYSTEMS</b>	P. Lieberzeit	<b>E M A P P H</b>	L. Cot	Conference closure
14:00	<b>Round Table Project- membranes</b>		R. RICHTER		G. Rios	
14:30			E. Reimhult		M. Barboiu	
15:00			15:00	Coffee break		G. Racoviteanu
			15:20	T. Wohland		M. Gheorghiu
15:30				J. Robbens		
16:00				T. Noguer		<b>Round Table On Selected Topics</b>
16:15			16:20	P. Wagner		
16:30			16:50	N. Starodub		
			17:20	N. Piven		
17:00			18:00	O. Popescu		
17:30						
18:00						
18:15						