



RESEARCH CONFERENCES

ESF-EMBO Symposium

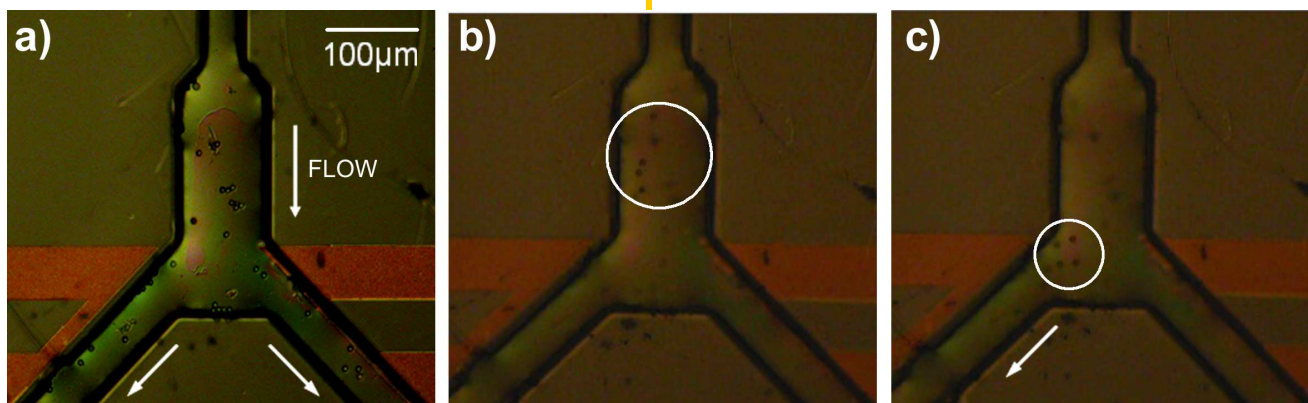
**Biomagnetism and
Magnetic Biosystems
Based on Molecular
Recognition
Processes**

Hotel Eden Roc, Sant Feliu de Guixols (Costa Brava) • Spain
22-27 September 2007

Chair: **J. Anthony C. Bland**, University of Cambridge, UK
Co-Chair: **Kurt R.A. Ziebeck**, University of Loughborough, UK

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With support from



Final Programme

Saturday 22 September

Late afternoon / early evening	Registration at the ESF-RC desk
20.00	Welcome Drink and Session Chairs meeting
20.30	Dinner

Sunday 23 September

07.30-09.00	Breakfast
09.00-09.25	Conference Opening

Session 1: Labelling and Manipulation of Biomolecules

Chair: Kurt R.A. Ziebeck, University of Loughborough, UK

09.25-10.05	Gos Micklem Cambridge University, Cambridge, UK <i>Labelling, Sequencing and Separation of Biomolecules</i>
10.05-10.30	Klas Gunnarsson (short talk) Uppsala University, Uppsala, SE <i>Programmable Transport of Proteins Immobilized to Magnetic Beads</i>
10.30-11.00	Coffee break
11.00-11.40	Urs Hafeli University of British Columbia, Vancouver, CA <i>Magnetic Drug Targeting</i>
11.40-12.05	Roy Derks (short talk) Eindhoven University of Technology, Eindhoven, NL <i>Integrated Fluid Transport in Micro Channels by Magnetic Particles</i>
12.05-12.45	J. Anthony C. Bland Cambridge University, Cambridge, UK <i>Towards Digital Biomagnetism</i>
13.00	Lunch

Session 2: Applications of Surface Plasmon Resonance

Chair: Thanos Mitrelias, University of Cambridge, UK

15.30-16.10	Hubert Brückl Nano-System-Technologies, Vienna, AT <i>Progress in Using Magnetic Nanoobjects for Biomedical Diagnostics</i>
16.10-16.35	Mihaela Gheorghiu (short talk) International Centre of Biodinamics, Bucharest, RO <i>SPR Assays with Magnetic Actuation for the Immuno-Affinity Detection of Target Cells</i>

- 16.35-17.00 **Petr Nikitin** (short talk)
Russian Academy of Science, Moscow, RU
Magnetic Immunoassays
- 17.00-17.30 Coffee break
- 17.30-19.00 **Poster Session**
- 19.30 Dinner

Monday 24 September

- 07.30-09.00 Breakfast

Session 3: GMR based Biosensors

Chair: **Hubert Brückl**, Nano-System-Technologies, Vienna, AT

- 09.00-09.40 **Menno Prins**
Philips Research Europe, Eindhoven, NL
Magnetic Biosensors
- 09.40-10.05 **Marioara Avram** (short talk)
National Institute for Research and Development in Microtechnologies, Bucharest, RO
Advanced MR Sensing of the Rotation Rate for Biomedical Applications
- 10.05-10.30 **Vanesa Fal Miyar** (short talk)
Oviedo University, Oviedo, ES
Giant Magnetoimpedance for Biosensing in Drug Delivery
- 10.30-11.00 Coffee break
- 11.00-11.40 **Shan Wang**
Stanford University, Stanford, US
CMOS Integrated Magnetic Biochip with High Density Spin Valve Sensor Array
- 11.40-12.05 **Gunter Reekmans** (short talk)
IMEC, Leuven, BE
Ultra-sensitive Magnetic Immunosensing Platform for the Detection of Proteins
- 12.05-12.30 **Marius Volmer** (short talk)
Transilvania University of Brasov, Brasov, RO
Detection of Magnetic-Based Bio-Molecules Using MR Sensors
- 13.00 Lunch

Session 4: Kinetics of Magnetic Entities in Liquid

Chair: **Shan Wang**, Stanford University, US

- 15.30-16.10 **Jérôme Bibette**
ESPCI, Paris, FR
Colloids and Beyond
- 16.10-16.35 **Angela Hight Walker** (short talk)
National Institute of Standards and Technology, Gaithersburg, US
Magnetic-Filed-Induced Chains of Cobalt Nanoparticles

16.35-17.00	Kim van Ommering (short talk) Philips Research Europe, Eindhoven, NL <i>Single Particle Analysis Platforms for Analyzing Magnetic Properties and Surface mobility</i>
17.00-17.30	Coffee break
17.30-19.00	Poster Session
19.30	Dinner

Tuesday 25 September

07.30-09.00	Breakfast
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Session 5: Biomedical Applications of Magnetic Materials

Chair: **Gos Micklem**, University of Cambridge, UK

09.00-09.40	Quentin Pankhurst London Centre for Nanotechnology, London, UK <i>In Vivo Sensing, Moving and Heating of Magnetic Nanoparticles in the Human Body</i>
09.40-10.05	Anja U.B. Wolter (short talk) Leibniz Institute for Solid State and Materials Research IFW, Dresden, DE <i>Carbon Coated Nanomagnets for Biomedical Applications</i>
10.05-10.30	Roxana Vasilco (short talk) National Institute for Research and Development in Microtechnologies, Bucharest, RO <i>Applications of Magnetic Materials and Devices in Medicine</i>
10.30-11.00	Coffee break
11.00-11.40	Kurt R.A. Ziebeck Loughborough University, Loughborough, UK <i>Magnetic Shape Memory Materials</i>
11.40-12.05	Genováva Filipcsei (short talk) Budapest University of Technology and Economics, Budapest, HU <i>Smart Membrane with On/Off switching control</i>
12.05-12.30	Clara Marquina (short talk) CSIC-Zaragoza University, Zaragoza, ES <i>Magnetic Sensors for Lateral Flow Test</i>
12.30	Lunch
Afternoon	Half-day excursion to Girona
19.30	Dinner

Wednesday 26 September

07.30-09.00 Breakfast

Session 6: Microfluidics and Integrated Devices

Chair: Adarsh Sandhu, Tokyo Institute of Technology, JP

- 09.00-09.40 **Paulo Freitas**
INESC MN, Lisbon, PT
Integrated Spintronic Platforms for Medical Diagnosis
- 09.40-10.05 **Chengxun Liu** (short talk)
Catholic University of Leuven, Leuven, BE
On-Chip Discrimination of Specific and Non-Specific Binding of Magnetic Particles using Combined Magnetic and Dielectrophoretic Forces
- 10.05-10.30 **Tom J. Hayward** (short talk)
Cambridge University, Cambridge, UK
Fluoro-Magnetic Encoding and Digital Detection for Low Error Rate Multiplexed Bioassays
- 10.30-11.00 Coffee break
- 11.00-11.25 **Luka Alexander Clarke** (short talk)
Lisbon University, Lisbon, PT
Development of a Magnetic Sensor-Based Array Platform for Simultaneous Detection of Multiple Cystic Fibrosis Mutations
- 11.25-11.50 **Fernando Martinez-Pedrero** (short talk)
Granada University, Granada, ES
A Kinetic Study of the Field Induced Aggregation Processes arising in Diluted Magnetic Particle Dispersions
- 11.50-12.15 **Carlo Trigona** (short talk)
Catania University, Catania, IT
RTD Fluxgate Performance for Application in Magnetic Label-Based Bioassay
- 12.30 Lunch

Session 7: Magnetic Nanostructures

Chair: Menno Prins, Philips Research Europe, Eindhoven, NL

- 15.30-16.10 **Chia-Ling Chien**
John Hopkins University, Baltimore, US
Controlled Manipulation of Nanoentities in Suspension
- 16.10-16.35 **Bennie Ten Haken** (short talk)
Twente University, Enschede, NL
Magnetic Detection of Fe-filled Carbon Nano Tubes with SQUID sensors
- 16.35-17.05 Coffee break
- 17.05-17.30 **Adrian Ionescu** (short talk)
Cambridge University, Cambridge, UK
Digital Encoding of Exchange Bias Magnetic Multilayers

- 17.30-17.55 **Nicholas Darton** (short talk)
Cambridge University, Cambridge, UK
The in-flow Capture of Superparamagnetic Nanoparticles for Systemic Targeting of Biotherapeutics
- 18.00-19.00 **Forward Look Round Table Discussion**
- 19.30 **Get-together & Conference Dinner**

Thursday 27 September

- 07.30-09.00 **Breakfast**

Session 8: Microfabricated Magnetic Biosensors

Chair: J. Anthony C. Bland, University of Cambridge, UK

- 09.00-09.40 **Adarsh Sandhu**
Tokyo Institute of Technology, Tokyo, JP
Hall Effect Biosensors for High Speed Detection of Magnetically Labeled Biomolecules
- 09.40-10.05 **Eugen Gheorghiu** (short talk)
International Centre of Biodinamics, Bucharest, RO
Assessment of Bio-Interfaces using Time Based Differential Impedance Spectroscopy
- 10.05-10.30 **Cheolgi Kim** (short talk)
Chungnam National University, Daejeon, KR
Performance of Magnetic Biomolecule Assays using Planar Hall Resistance in Spin Valve Structure
- 10.30-11.00 **Coffee break**
- 11.00-12.00 **Hotel check-out**
- 12.00 **Lunch & Departure**

Abstracts, Posters & Short Oral Presentations

Posters will be on display for the whole duration of the conference, with poster sessions in the afternoon. All abstracts are accepted for poster presentation. Invited lectures are 30+10 minutes discussion, contributed talks are 20+5 minutes discussion.