MAGNETIC PARTICLE BASED PLATFORMS AND BIOASSAYS

Summer School

Program and schedule

PRACTICAL SESSIONS

Monday 30th June and Tuesday 1st July UAB. Sciences and Biosciences Faculty, Laboratory C7/288

- Welcome (Seminari del Departament de Química)
- Introduction to Practical sections

Open to 8 external students

- Practical session 1. Bioimaging of human cells and bacteria coupled on magnetic micro and nanocarriers. Microscopy techniques for magnetic particle characterization: SEM, TEM, confocal fluorescence microscopy.
- Practical session 2. Flow citometry of human cells coupled on magnetic micro and nanocarriers.
- Practical Session 3. Oriented modification of magnetic particles with DNA, antibodies and other affinity proteins on different functionalized of magnetic carriers. Characterization of the immobilization efficiency and orientation.
- Practical session 4. Determination of pathogenic bacteria in complex samples by electrochemical magneto genosensing.

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Wednesday 2nd July

■ (9.00 am) Lecture 1 "Nano(micro)biotechnological Perspectives for In Vitro Diagnostics". María Pilar Marco, Nanobiotechnology for Diagnostics Group, CSIC, Spain.

■ (10.00 am) Flash communication Section 1. UPMC, UU, UAB **BIOMAX** fellows

■ (10.40 am) Poster section and coffee break

■ (11.15 am) Lecture 2 "The Use of Paramagnetic Microparticles in Unique Chemiluminescent Immunoassays". Josep Serra, R&D Manager BioKit, Spain.

■ (12.15 am) Selected procedures. "Immobilization of biomolecules on magnetic particles and characterization". Susana Liébana. Gwent, UK.

Lunch and free time

Afternoon (3.00 pm)

■ (3.00 pm). Lecture 3 "Microfluidic chips and magnetic particles for analytical applications". Martin Gijs, École Polytechnique Fédérale de Lausanne, Switzerland.

■ (4.00 pm) Flash communication Section 2. TUe, KUL, UPFL **BIOMAX fellows**

■ (4.40 pm) Poster section and coffee break

■ (5.15 pm) Lecture 4 "Novel applications of Magnetic particles in *In Vitro* Diagnostics (IVD) assays". Ernst Lindhout, Future Diagnostics, Netherlands.

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Thursday 3rd July

- (9.00 am) Lecture 5. "Molecular tools for single cell and single molecule analyses" . Ulf Landegren, Uppsala University, Sweden.
- (10.00 am) Lecture 6. “Integrated lab-on-chip biosensing based on actuated magnetic particles” Menno Prins, Philips, Netherlands
- (11.00 am) Poster section and coffee break
- (11.40 am) Lecture 7. “Micro and nanofluidics for diagnostics and life science applications", Jeroen Lammertyn, University of Leuven, Belgium.
- (12.40 am) Closure