

**Program SFB TR6 Summer School on Soft Matter  
Colloids in external fields: Physics and applications**

October 02 - October 13, 2006

| <b>Tuesday, 03.10.06</b> |                                                                                                                                        |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 - 09:45            | <b>H. Löwen, Universität Düsseldorf:</b>                                                                                               |
| 09:45 - 10:30            | <b>Lecture I:</b> Structure, Phase Transitions and Dynamics of Colloids in External Fields: Liquid State and Density Functional Theory |
| 10:30 - 11:00            | <b>Coffee Break</b>                                                                                                                    |
| 11:00 - 11:45            | <b>M. Fuchs, Universität Konstanz</b>                                                                                                  |
| 11:45 - 12:30            | <b>Lecture I:</b> t.b.a.                                                                                                               |
| 12:30 - 14:00            | <b>lunch</b>                                                                                                                           |
| 14:00 - 16:00            | <b>free time</b>                                                                                                                       |
| 16:00 - 16:15            | <b>J. Baumgartl, Universität Stuttgart</b>                                                                                             |
|                          | On the Limits of Digital Video Microscopy                                                                                              |
| 16:15 - 16:30            | <b>V. de Villeneuve, Van't Hoff Laboratorium, Utrecht</b>                                                                              |
|                          | Stacking Disorder in Hard Sphere Crystals                                                                                              |
| 16:30 - 16:45            | <b>A. Duri, Université Montpellier</b>                                                                                                 |
|                          | Spatial Correlations and Temporal Heterogeneity of the Slow Dynamics of a Colloidal Fractal Gel                                        |
| 16:45 - 17:00            | <b>M. Dutt, University of Cambridge</b>                                                                                                |
|                          | Numerical Studies of Ultrafine Particles in the Absence and Presence of External Fields                                                |
| 17:00 - 17:30            | <b>coffee break</b>                                                                                                                    |
| 17:30 - 18:15            | <b>J.K.G. Dhont, IFF Jülich</b>                                                                                                        |
| 18:15 - 19:00            | <b>Lecture I:</b> Statistical Mechanics of Rod-like Colloids                                                                           |

| <b>Wednesday 04.10.06</b> |                                                               |
|---------------------------|---------------------------------------------------------------|
| 09:00 - 09:45             | <b>J. Bibette,</b>                                            |
| 09:45 - 10:30             | <b>Lecture I:</b> t.b.a.                                      |
| 10:30 - 11:00             | <b>coffee break</b>                                           |
| 11:00 - 11:45             | <b>J.F. Allemand, Lab Phys Stat, ENS</b>                      |
| 11:45 - 12:30             | <b>Lecture I:</b> Single DNA Molecule Micromanipulations      |
| 12:30 - 14:00             | <b>lunch</b>                                                  |
| 14:00 - 16:00             | <b>free time</b>                                              |
| 16:00 - 17:30             | <b>poster session</b>                                         |
| 17:30 - 18:15             | <b>J.K.G. Dhont, IFF Jülich</b>                               |
| 18:15 - 19:00             | <b>Lecture II:</b> Statistical Mechanics of Rod-like Colloids |

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| <b>Thursday, 05.10.06</b> |                                                                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 - 09:45             | <b>H. Löwen, Universität Düsseldorf:</b>                                                                                                |
| 09:45 - 10:30             | <b>Lecture II:</b> Structure, Phase Transitions and Dynamics of Colloids in External Fields: Liquid State and Density Functional Theory |
| 10:30 - 11:00             | <b>coffee break</b>                                                                                                                     |
| 11:00 - 11:45             | <b>M. Fuchs, Universität Konstanz</b>                                                                                                   |
| 11:45 - 12:30             | <b>Lecture II:</b>                                                                                                                      |
| 12:30 - 14:00             | <b>lunch</b>                                                                                                                            |
| 14:00 - 17:30             | <b>free time</b>                                                                                                                        |
| 17:30 - 18:15             | <b>G.J. Vroege, Universiteit Utrecht</b>                                                                                                |
| 18:15 - 19:00             | <b>Lecture I:</b> t.b.a.                                                                                                                |

| <b>Friday, 06.10.06</b> |                                                                                                                         |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------|
| 09:00 - 09:45           | <b>J. Bibette,</b>                                                                                                      |
| 09:45 - 10:30           | <b>Lecture II:</b> t.b.a.                                                                                               |
| 10:30 - 11:00           | <b>coffee break</b>                                                                                                     |
| 11:00 - 11:45           | <b>J. F. Allemand, CNRS, Lab Phys Stat, ENS</b>                                                                         |
| 11:45 - 12:30           | <b>Lecture II:</b> Single DNA Molecule Micromanipulations                                                               |
| 12:30 - 14:00           | <b>lunch</b>                                                                                                            |
| 14:00 - 16:00           | <b>free time</b>                                                                                                        |
| 16:00 - 16:15           | <b>E. Sanz, Universiteit Utrecht</b><br>A Numerical Study of the Liquid-Solid Nucleation in Oppositely Charged Colloids |
| 16:15 - 16:30           | <b>H. Guo, Universiteit Amsterdam</b><br>The Reversible Freezing and Melting of Colloidal Crystals                      |
| 16:30 - 16:45           | <b>P. Henseler, Universität Konstanz</b><br>Lane Reduction in Driven 2d-Colloidal Systems through Microchannels         |
| 16:45 - 17:00           |                                                                                                                         |
| 17:00 - 17:30           | <b>coffee break</b>                                                                                                     |
| 17:30 - 18:15           | <b>G.J. Vroege, Universiteit Utrecht</b>                                                                                |
| 18:15 - 19:00           | <b>Lecture II:</b> t.b.a.                                                                                               |

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| <b>Saturday, 07.10.06</b> |                                                                                                |
|---------------------------|------------------------------------------------------------------------------------------------|
| 09:00 - 09:45             | <b>D. Weitz, Harvard University</b><br><b>Lecture I:</b> Colloidal Crystals, Glasses and Gels  |
| 09:45 - 10:30             |                                                                                                |
| 10:30 - 11:00             | <b>coffee break</b>                                                                            |
| 11:00 - 11:45             | <b>D. Weitz, Harvard University</b><br><b>Lecture II:</b> Colloidal Crystals, Glasses and Gels |
| 11:45 - 12:30             |                                                                                                |
| 12:30 - 14:00             | <b>lunch</b>                                                                                   |
| 14:00 - 19:00             | <b>free time / excursion</b>                                                                   |

| <b>Sunday 08.10.06</b> |                  |
|------------------------|------------------|
| 09:00 - 19:00          | <b>free time</b> |

| <b>Monday, 09.10.06</b> |                                                                                                                                                               |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 - 09:45           | <b>A. van Blaaderen, Universiteit Utrecht</b><br><b>Lecture I:</b> Colloids under External Control                                                            |
| 09:45 - 10:30           |                                                                                                                                                               |
| 10:30 - 11:00           | <b>coffee break</b>                                                                                                                                           |
| 11:00 - 11:45           | <b>A. Roch, University Mons-Hainaut</b><br><b>Lecture I:</b> The Magnetic Relaxation of Magnetic Colloids, from Theory to its Applications in Medicinal Field |
| 11:45 - 12:30           |                                                                                                                                                               |
| 12:30 - 14:00           | <b>lunch</b>                                                                                                                                                  |
| 14:00 - 16:00           | <b>free time</b>                                                                                                                                              |
| 16:00 - 16:15           | <b>P. Hopkins, University of Bristol</b><br>Interfacial Properties of a Binary (Point) Yukawa Fluid                                                           |
| 16:15 - 16:30           | <b>K. Kang, IFF Jülich</b><br>Diffusion of Spheres through Rod Networks: the Role of Hydrodynamic Screening                                                   |
| 16:30 - 16:45           | <b>P. Keim, Universität Graz</b><br>The Hexatic Phase in a 2d Colloidal System                                                                                |
| 16:45 - 17:00           | <b>M. Krüger, Universität Konstanz</b><br>Effective Temperature in Stationary States of Interacting Brownian Particles under Shear                            |
| 17:00 - 17:30           | <b>coffee break</b>                                                                                                                                           |
| 17:30 - 18:15           | <b>A. Roch, University Mons-Hainaut</b><br><b>Lecture II:</b> Use of Magnetometry and Relaxometry to Characterize Colloidal Suspensions of Nano-Magnets       |
| 18:15 - 19:00           |                                                                                                                                                               |

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| Tuesday, 10.10.06   |                                                                                                                                                                             |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 - 09:45       | <b>G. Bossis, Université de Nice Pare Valrose</b>                                                                                                                           |
| 09:45 - 10:30       | <b>Lecture I:</b> Magnetorheology: Theory and Applications                                                                                                                  |
| 10:30 - 11:00       | coffee break                                                                                                                                                                |
| 11:00 - 11:45       | <b>C. Holm,</b>                                                                                                                                                             |
| 11:45 - 12:30       | <b>Lecture I:</b> Introduction to Properties of Magnetic Colloids                                                                                                           |
| 12:30 - 14:00       | lunch                                                                                                                                                                       |
| 14:00 -16:00        | free time                                                                                                                                                                   |
| 16:00 - 17:30       | poster session                                                                                                                                                              |
| 17:30 - 18:15       | <b>A. van Blaaderen, Universiteit Utrecht</b>                                                                                                                               |
| 18:15 -19:00        | <b>Lecture II:</b> Colloids under External Control                                                                                                                          |
| Wednesday, 11.10.06 |                                                                                                                                                                             |
| 09:00 - 09:45       | <b>G. Bossis, Université de Nice Pare Valrose</b>                                                                                                                           |
| 09:45 - 10:30       | <b>Lecture II:</b> Field Induced Structures in ER and MR Suspensions                                                                                                        |
| 10:30 - 11:00       | coffee break                                                                                                                                                                |
| 11:00 - 11:45       | <b>K. Binder, Universität Mainz</b>                                                                                                                                         |
| 11:45 - 12:30       | <b>Lecture I:</b> Colloidal Systems Confined between Walls: Monte Carlo Simulations and Theoretical Concepts                                                                |
| 12:30 - 14:00       | lunch                                                                                                                                                                       |
| 14:00 -16:00        | free time                                                                                                                                                                   |
| 16:00 - 16:15       | <b>A. Kryrylyuk, Universiteit Eindhoven</b><br>Rotational Brownian Motion and Light Scattering by Anisotropic Ellipsoidal Particles in a Uniform dc External Electric Field |
| 16:15 - 16:30       | <b>N. Ostermann, University of Ljubljana</b><br>Measurement of Interparticle Potential in Liquid Crystal Using Magneto-Optical Tweezers                                     |
| 16:30 - 16:45       | <b>M. Ravnik, University of Ljubljana</b><br>Micro- and Nano- Colloids in a Capillary Filled with a Nematic Liquid Crystal                                                  |
| 16:45 - 17:00       | <b>A. Sengupta, S.N. Bose National Centre, Kolkata</b><br>Non Equilibrium Crystalline and Amorphous States of a Driven Solid                                                |
| 17:00 - 17:30       | coffee break                                                                                                                                                                |
| 17:30 - 18:15       | <b>C. Holm,</b>                                                                                                                                                             |
| 18:15 -19:00        | <b>Lecture II:</b> Introduction to Properties of Magnetic Colloids                                                                                                          |

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| Thursday, 12.10.06 |                                                                                                               |
|--------------------|---------------------------------------------------------------------------------------------------------------|
| 09:00 - 09:45      | <b>E. Hornes, Genpoint Norway</b>                                                                             |
| 09:45 - 10:30      | <b>Lecture I:</b> Application of Magnetic Particles in Human Diagnostics and Therapy                          |
| 10:30 - 11:00      | <b>coffee break</b>                                                                                           |
| 11:00 - 11:45      | <b>K. Binder, Universität Mainz</b>                                                                           |
| 11:45 - 12:30      | <b>Lecture II:</b> Colloidal Systems Confined between walls: Monte Carlo Simulations and Theoretical Concepts |
| 12:30 - 14:00      | <b>lunch</b>                                                                                                  |
| 14:00 - 16:00      | <b>free time</b>                                                                                              |
| 16:00 - 16:15      | <b>S. van Teeffelen, Universität Düsseldorf</b>                                                               |
| 16:15 - 16:30      | Freezing of Superparamagnetic Colloids in Two Dimensions                                                      |
| 16:15 - 16:30      | <b>E. Vermolen, Universiteit Utrecht</b>                                                                      |
| 16:30 - 16:45      | Creating Templates for Nucleation and Growth of Colloidal (Photonic) Crystals                                 |
| 16:30 - 16:45      | <b>R. Vink, Universität Düsseldorf</b>                                                                        |
| 16:45 - 17:00      | Random Field Effects in Colloidal Fluids with Quenched isorder                                                |
| 16:45 - 17:00      | <b>J. Zwanikken, Universiteit Utrecht</b>                                                                     |
| 17:00 - 17:30      | Mode Selection and Stretching of Capillary Waves by Shear Flow                                                |
| 17:00 - 17:30      | <b>coffee break</b>                                                                                           |
| 17:30 - 18:15      | <b>E. Hornes, Genpoint Norway</b>                                                                             |
| 18:15 - 19:00      | <b>Lecture II:</b> Application of Magnetic Particles in Human Diagnostics and Therapy                         |