

COST Action FP1005 – FINAL CONFERENCE

Jointly with EUROMECH Colloquium 566 “Anisotropic particles in turbulence”

NTNU, Trondheim (Norway) - June 9-12, 2015

DAY 1 – TUESDAY, JUNE 9

13:45 **Registration (COST participants)**

14:10 **Welcome Address to COST FP1005 Conference**

SESSION 1

14:30 ***Keynote:* Structural changes in the pulp and paper industry - Influences
and direction on R&D**

Speaker: Tomas Wikstrom (Valmet AB, Sundsvall, Sweden)

15:10 **Detailed simulations of early paper forming**

Speaker: Gustav Kettil (Fraunhofer-Chalmers Centre, Gothenburg, Sweden)

15:30 **Rheology of pulp fiber suspension at medium and high consistency**

Speaker: Florin Ciolacu ("Gheorghe Asachi" Technical University of Iasi, Romania)

15:50 **Coffee Break**

SESSION 2

16:10 **Detailed measurement of fibre suspension pipe flow velocity profile**

Speaker: Antti Koponen (VTT Technical Research Centre of Finland, Jyväskylä, Finland)

16:30 **Numerical study of fiber flocculation in the turbulent air flow of an asymmetric planar
diffuser**

Speaker: Jelena Andric (Chalmers University of Technology, Göteborg, Sweden)

16:50 **Characteristic flocculation time in free jet of pulp of paper (nozzle of headbox)**

Speaker: Salaheddine Skali Lami (LEMETA ESSTIN, Nancy, France)

17:10 **Turbulent flow of concentrated pulp suspensions in a pipe - numerical study based on a
pseudo homogeneous approach**

Speaker: Maria Graça Rasteiro (University of Coimbra, Coimbra, Portugal)

17:30 **End of Day**

DAY2 – WEDNESDAY, JUNE 10

09:00 **Registration (EUROMECH participants and COST latecomers)**

09:15 **Welcome Address to Euromech Colloquium**

SESSION 3

09:30 ***Keynote:* Fibres and fibrils in shear and extension: inertia vs diffusion**
Speaker: Fredrik Lundell (Royal Institute of Technology, Stockholm, Sweden)

10:10 **Multiscale modelling of concentrated suspensions of spherical particles**
Speaker: Bob Powell (University of California at Davis, USA)

10:30 **Cascade amplification of fluctuations**
Speaker: Michael Wilkinson (Open University, Milton Keynes, United Kingdom)

10:50 **Coffee Break**

SESSION 4

11:10 **The numerical study of drag torque coefficient of finite cylinder at moderate Reynolds number range**
Speaker: Dariusz Asendrych (Czestochowa University of Technology, Poland)

11:30 **Cost effective drag reduction by bio-polymer additives in industrial size turbulent pipe flow**
Speaker: Mattia Simeoni (University of Udine, Italy)

11:50 **Polymer-fiber laden flows in pipes of different diameters**
Speaker: Lawrence C. Edomwonyi-Otu (UCL London, United Kingdom)

12:10 **Collisions of poly-disperse spheroids settling in turbulence**
Speaker: Christoph Siewert (RWTH Aachen University, Aachen, Germany)

12:30 **Lunch**

SESSION 5

14:00 ***Keynote:* Measurements of rotation and alignment of fibers, spheres and disks in turbulent flow**
Speaker: Greg Voth (Wesleyan University, Middletown, USA)

14:40 **Combined measurements of flow field and rigid fiber rotation/translation in near homogeneous isotropic turbulence**
Speaker: Lilach Sabban (Technion, Haifa, Israel)

15:00 **Electrical tomography use for imaging pulp suspensions flow in pipes: Restraints and evolution**
Speaker: Pedro Faia (University of Coimbra, Coimbra, Portugal)

15:20 End of Day ⇒ NOTE: **19:30 Social Dinner!**

DAY3 – THURSDAY, JUNE 11

SESSION 6

09:30 ***Keynote:* Dynamics and rheology of a dilute viscoelastic suspension of spheroids in an unbounded shear flow**

Speaker: Pier Luca Maffettone (University of Napoli “Federico II”, Napoli, Italy)

10:10 **Drag and lift on prolate spheroids at low Reynolds numbers from CFD**

Speaker: Fengjian Jiang (NTNU, Trondheim, Norway)

10:30 **Numerical simulations of non-spherical particles in shear flows**

Speaker: Mehdi Niazi and Luca Brandt (KTH, Stockholm, Sweden)

10:50 **Coffee Break**

SESSION 7

11:10 **Magnetic resonance velocimetry of non-cellulosic fibre suspension flows**

Speaker: Jordan MacKenzie (Royal Institute of Technology, Stockholm, Sweden)

11:30 **On the validity of Jeffery torques for rigid particles in turbulence**

Speaker: Jure Ravnik (University of Maribor, Slovenia)

11:50 **Dispersion of rigid fibers in turbulent channel flow turbulence**

Speaker: Cristian Marchioli (University of Udine, Italy)

12:10 **Strategy in modelling irregular shaped particle behavior in confined turbulent flows**

Speaker: Martin Sommerfeld (Martin-Luther-Universität Halle-Wittenberg, Germany)

12:30 **Lunch Break**

SESSION 8

14:00 ***Keynote:* Effect of weak fluid inertia upon Jeffery orbits**

Speaker: Bernhard Mehlig (University of Gothenburg, Gothenburg, Sweden)

14:40 **Orientalional dynamics of a single neutrally buoyant spheroid in simple shear flow**

Speaker: Tomas Rosen (Royal Institute of Technology, Stockholm, Sweden)

15:00 **Orientation and rotation of inertial disk particles in wall turbulence**

Speaker: Niranjana Reddy Challabotla (NTNU, Trondheim, Norway)

15:20 **An accurate cut-cell method for interface-resolved simulations of particles with complex shapes**
Speaker: Lennart Schneiders (RWTH Aachen University, Germany)

15:40 **Numerical study on the stochastic features of drag and lift forces on a spheroid: contribution of self-induced vortex shedding**
Speaker: Jungwoo Kim (Seoul National University of Science and Technology, Korea)

16:00 End of Day

DAY4 – FRIDAY, JUNE 12

SESSION 9

09:30 *Keynote:* **Bacteria in a flow**
Speaker: Eric Clément (University “Pierre et Marie Curie”, Paris, France)

10:10 **Influence of thermal stratification on plankton surfacing in turbulent open channel flow**
Speaker: Alfredo Soldati (University of Udine, Udine, Italy)

10:30 **Clustering of chiral particles in flows with broken parity invariance**
Speaker: Kristian Gustafsson (University of Rome “Tor Vergata”, Italy)

10:50 **Coffee Break**

SESSION 10

11:10 **Spheroids in wall turbulence: Part 1 effect of the shear**
Speaker: Lihao Zhao (Norwegian University of Science and Technology, Trondheim, Norway)

11:30 **Spheroids in wall turbulence: Part 2 effects of inertia**
Speaker: Helge I. Andersson (Norwegian University of Science and Technology, Trondheim, Norway)

11:50 **Breakage of ductile aggregates in turbulent channel flow**
Speaker: Cristian Marchioli (University of Udine, Udine, Italy)

12:10 **A stochastic approach for multilayer deposition and resuspension in turbulent flows**
Speaker: Christophe Henry (IMP PAN, Gdansk, Poland)

12:30 Meeting closure
