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# CALL FOR PAPERS

**ABSTRACT DEADLINE: NOVEMBER 1, 2005**

**REMINDER:** *In fairness to all potential authors, late abstracts will not be accepted.*

## MRS Symposium V: Structure and Dynamics of Charged Macromolecules at Solid-Liquid Interfaces

Many technologies, both emerging and established, depend and focus on charged macromolecules near solid-liquid interfaces. Examples include the dissolution of advanced photoresists in aqueous base solutions, microfluidic channel technologies to manipulate biological macromolecules such as DNA, and the controlled degradation of tissue-engineering scaffold or drug-delivery materials. To optimize performance and to design new applications, an improved understanding of the structure and dynamics of these molecules is needed. Because of the electrostatic interactions and connectivity of the molecules, the dynamics and structure of these materials are affected by subtle changes in dielectric constant, charge valence, ionic strength, and charge density. The perturbation of the structure and dynamics at solid-liquid interfaces is currently poorly understood and characterized with respect to the influence of substrate insulating or conductive properties and surface chemical and topological patterning. During this symposium, we hope to gather leading researchers from industry, academia, and government to identify key technical issues, new measurement methods, and theory and simulation results to guide and advance common scientific and technical issues involving charged macromolecules at solid-liquid interfaces.

Topics of interest include, but are not limited to:

- Application areas including microfluidic channels, surface-attached DNA, RNA, or proteins in micro-array technologies
- Kinetics of dissolution (photoresist materials, scaffold degradation, and drug delivery)
- Polyelectrolyte adsorption and complexation with surfaces including colloid and surfactant particles
- Proteins in lipid bilayers supported on solid substrates
- Surface-initiated synthesis of charged polymers
- Experimental methods to study the solid-liquid interface: fluorescence correlation spectroscopy, evanescent-wave light scattering, fluorescence recovery after patterned photobleaching, vibrational sum frequency generation spectroscopy, quartz crystal microbalance, reflectivity, etc.

**Invited speakers** include: **Nily Dan** (Drexel Univ.), **Todd Emrick** (Univ. of Massachusetts-Amherst), **William Hinsberg** (IBM Almaden Research Ctr.), **Wolfgang Knoll** and **Kurt Kremer** (Max-Planck-Inst.-Mainz, Germany), **Rastislav Levicky** (Columbia Univ.), **M. Muthukumar** (Univ. of Massachusetts-Amherst), **Jürgen Rühle** (Univ. of Freiburg, Germany), **Joseph Schlenoff** (Florida State Univ.), **Svetlana Sukhishvili** (Stevens Inst. of Technology), **Gerhard Wegner** (Max-Planck-Inst.-Mainz, Germany), and **Haw Yang** (Univ. of California-Berkeley).

### Symposium Organizers

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