

polymer networks

conference
2004

Research of Gelation
Phenomena, and
Properties of Synthetic
and Biopolymer Gels

August 15-19
Natcher Conference Center
National Institutes of Health
Bethesda, Maryland, USA

Plenary Lecture

Pierre-Gilles de Gennes (Collège de France) 1991 Nobel Laureate in Physics
Dynamics of Cellular Adhesion

Main Lectures

Kristi Anseth (University of Colorado)
Hydrogels Formed from Multifunctional Macromolecular Monomers and Their Application as Cell Scaffolds

Peter Bassler (NICHD, NIH)
Osmotic Characterization of Tissue Properties

Frank Bates (University of Minnesota)
Self Assembled Block Copolymer Network Morphologies

Ben Chu (State University of New York, Stony Brook)
Manipulation of Polymer Chain Entanglement and Self-Assembly for DNA Sequencing Analysis and Gene Delivery

Edmund DiMarzio (NIST, University of Maryland)
Pulling a Polymer through a Membrane: Coupling of the Five Isolated Molecule Phase Transitions

Jack Douglas (NIST)
Thermodynamics and Dynamics of Equilibrium Polymerization and Thermally Reversible Gelation

Erik Geissler (University of Grenoble)
Light, Small Angle Neutron and X-ray Scattering from Gels

Alan Grodzinsky (MIT)
Probing Molecular Properties of Cartilage Constituents

Gregory B. McKenna (Texas Tech University)
Elasticity and Rheology in Gels: Synthetic Networks to DNA

Murugappan Muthukumar (University of Massachusetts)
Phase Transitions in Polyelectrolyte Gels

Ralph Nossal (NICHD, NIH)
Clathrin Basket Formation: World Cup Physics at the Cellular Level

Adrian Parsegian (NICHD, NIH)
Confined Polymers: Big World in a Small Space

Costas Patrickios (University of Cyprus)
Polyelectrolytic Amphiphilic Model Networks: Synthesis, Characterization and Modeling

Buddy Ratner (University of Washington)
Novel Hydrogels Based on Poly(vinyl alcohol) and Amino Acids

Simon Ross-Murphy (King's College)
Self Assembly of Fibrillar Gels - Biomimetic Systems from Proteins

Ron Siegel (University of Minnesota)
Pulsing Gels and Gels in MEMS: A Basis for Episodic Delivery of Insulin and Reproductive Hormones

Grant Smith (University of Utah)
A Molecular Dynamics Simulation Study of the Structure and Viscoelastic Properties of Ionomer Network

Ichiji Tasaki (NICHD, NIH)
Repetitive Abrupt Structural Changes Associated with Calcium-Sodium Exchange in Synthetic Polyanionic Hydrogels and in Living Nerve Fibers

Rocky Tuan (NIAMS, NIH)
Polymeric Scaffolds for Cartilage Tissue Engineering

Julius Vancso (University of Twente)
Nanoscale Surface Engineering of Polymer Networks: Platforms to Link Artificial and Biological Systems

Pedro Verdugo (University of Washington)
Dynamics of Biopolymer Networks: From Material Storage and Release in Cell Secretion to Marine Polymer Assembly in the Ocean

Newell Washburn (NIST)
Fluorescence Correlation Spectroscopy Investigation of Growth Factor Dynamics in Model Extracellular Matrices

Miklos Zrinyi (University of Budapest)
Electric and Magnetic Field Sensitive Polymer Gels

Organizing Committee

Chairs: Eric J. Amis (NIST) and Ferenc Horkay (NIH)
Co-Chairs: Peter J. Bassler (NIH) and Jack F. Douglas (NIST)

for more information:
www.polymer.nichd.nih.gov

