Core-Shell Latex Particles- Fundamental Aspects of Morphology Control

Day 1

AM:

1. Goals of the Workshop
2. Examples of particle morphologies
3. Equilibrium and kinetic structures
4. Emulsion polymerization principles
5. Preparation of first stage (seed) latex
6. Post-polymerization treatment

PM:

1. Design of seed latex recipe/process
2. Morphology characterization of structured latex particles
3. Determination of particle structure from analytical data

Day 2

AM:

1. Equilibrium morphologies
2. Free energy concepts/applications
3. Interfacial tensions
4. Effect of cross-linking
5. Effect of functional additives

PM:

1. Use of interactive software for predicting equilibrium morphology
2. Computation of interfacial polymer
3. Morphology predictions through examples
4. Hands-on use of UNHLATEX® Eqmorph software – design problem

Day 3

AM:

1. Kinetic controlled morphology
2. Multi-phase polymerization
3. Phase diagrams
4. Diffusion in polymers
5. Phase separation, latex aging

PM:

1. Use of interactive software for predicting kinetic morphology
2. Morphology predictions through examples
3. Hands-on use of UNHLATEX® Kmorph software – design problem

Day 4

AM:

1. Structural evolution of latex particle morphology during polymerization
2. Interactive session – developing a morphology matrix
3. Multi-lobed particles – a new equilibrium basis
4. Morphology decision matrix and closing comments