

Center for Nanophase Materials Sciences (CNMS)



CNMS DISCOVERY SEMINAR SERIES

Joint Meeting with the

Chemical Sciences Division Seminar Series

Wednesday, March 22, 2006

3:00 pm

4500N, Weinberg Auditorium

Refreshments will be served at 2:45 pm

“Spherical Charged Brushes with Divalent Counterions”

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Abstract

Charged polymer brushes are studied by forming charged-neutral diblock copolymer micelles in water. The brush is made by the corona of the micelle and contains a large majority of the counterions (no added salt case). For monovalent counterions, the charged chains are well described by rods around which the counterions follow a Poisson-Boltzmann law. For divalent counterions, the charged corona is found contracted with respect to the monovalent case. At small spatial scale the divalent counterions are found to “dress” exactly the polyelectrolyte chains whereas at a larger scale this simple picture breaks down and suggest ion-ion correlations beyond the mean-field level.

Host: Jimmy Mays, 574-7199, maysjw@ornl.gov

