

Departamento de
Termodinámica
Aplicada



UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA



Seminario

Interaction between Poly (acrylic acid) Brushes measure by Optical Tweezers

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The forces of interaction between *single* pairs of poly (acrylic-acid) (PAA) grafted colloids (SiO_2 , diameter: 1.5 μm) are measured with high precision (± 50 fN) by means of Optical Tweezers. Parameters to be varied are the concentration and valence of the counterions (KCl, CaCl_2) of the surrounding medium and furthermore its pH.

Interaction between polyelectrolytes arises from different origin. At low salt concentration of the medium the electrostatic interaction play an important role, whereas this effect vanishes when the salt concentration increases. On the contrary, the translational entropy of the counterions has its maximum effect at high salt concentrations.

The data can be – within the limits of experimental accuracy – *quantitatively* described by a recently published model of spherical polyelectrolyte brushes which takes especially into account the entropic effect of the counterions. From the analysis it is possible to estimate the salt concentration inside the brush and the persistence length of the grafted chains.

Lugar: Salón de Grados (2ª planta) ETSII

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Fecha y hora: **Miércoles 30 de abril 2008 12.00 h.**