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Electrostatic properties of two finite width charged dielectric slabs in water Y.S. JHO, UCSB, M. KANDUC, SI-1000 Ljubljana, A. NAJI, UCSB, M.W. KIM, KAIST/UCSB, R. PODGORNIK, SI-1000 Ljubljana, F.L.H. BROWN, P.A. PINCUS, UCSB — We study the electrostatic interaction between two like-charged membranes of finite thickness embedded (composed of five parallel dielectric interfaces) in a medium of higher dielectric constant. A generalized SC theory is applied along with extensive Monte-Carlo simulations which applied numerical algorithm based on the image charge method to calculate accurate electrostatic potential or forces. We found the dielectric discontinuity is important in a SC regime. They drive strong counterion crowding in the central region of the inter-surface space upon increasing the solvent/membrane dielectric mismatch and change the membrane interactions from attractive to repulsive at small separations.

Yongseok Cho
UCSB

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