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Colloidal particles adsorption fluctuations: experimental and kirkwood buff integrals approaches

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Colloidal particles (amidine latex, 1 μm in diameter) in aqueous solution are put in contact with a glass slide under ambient conditions where they adsorb. The particle concentration is fixed during the experiment by mean of an infinite reservoir. Using a simple optical microscope, $240 \times 320 \mu\text{m}^2$ images of the population of the adsorbed particles are taken while the glass slide and the solution are at equilibrium. Analyzing the surface population we get the direct access to the isotherm, i.e. surface concentration as a function of solution concentration. The isotherm is alternatively obtained both from the density fluctuation and/or from the pair distribution function and the use of the Kirkwood Buff Integral. The results clearly show the equality of the chemical potential between the two phases.

Participation

In-Person

References

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Energy Transition Focused Abstracts

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