سمینار هفتگی ماده چگال نرم

Analytical expression of the Frank elastic constants of rod-like liquid crystals

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In nematic-smectic transition we must adding Frank-Oseen energy to the total free energy, that Frank-Oseen energy dependent on the deformations of nematic director.
These deformations are splay, twist and bend that indicated by K_1, K_2 and K_3 respectively. For derived an expression of this elastic constants we used of nematic polymer solutions. These expressions are derived in the Gaussian approximation for high degree nematic ordering. The result is complete agreement with recent numerical work for rod-like liquid crystals in nematic solutions.

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