

Abstract Submitted  
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**Densely grafted brushes of gradient copolymers: an effective Flory-Huggins parameter approach**<sup>1</sup> SERGEY VENEV, IGOR POTEKIN, Department of Physics, Moscow State University, Moscow 119992, Russian Federation; Department of Polymer Science, University of Ulm, 89069 Ulm, Germany — Manufacturing of gradient copolymers becomes cheaper and easier nowadays. There is a wide spectrum of experimental applications for such polymers. In this work, densely grafted gradient copolymer (monomers distribution function  $g(n)$  along the chain is assumed to be a power law) brushes in a selective solvent are considered. Equilibrium thermodynamic properties of the system are investigated within the frames of a simple mean-field approach and an effective Flory-Huggins parameter  $\chi_{eff}(n)$  approximation. Constructed profiles for polymer concentration demonstrate non-linear behavior, however the brush thickness varies in direct proportion to the molecular weight of copolymer. Coil-Globule transition properties in such a system are investigated as well.

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