

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Brownian diffusion close to polymer brushes BENOIT LOPPINET, IESL-FORTH Heraklion Greece, EMMA FILIPPIDI, Dept Biomedical Engineering, Boston University, VASSILIK MICHAILEDOU, GEORGE FYTAS, IESL-FORTH, Heraklion, Greece, JUERGEN RUEHE, IMTEK University of Freiburg — Brownian diffusion of diluted colloidal particles of different sizes was investigated by evanescent wave dynamic light scattering in the vicinity of polystyrene polymer brushes grafted to a glass surface. The particles concentration profiles, resolved from the penetration depth dependence of the scattered intensities, evidenced an excluded region close to the glass hard wall with a characteristic size increasing with the brushes grafting density. The dynamic of large hard spheres particles ($R=120\text{nm}$), excluded from the brushes, was slowed down though slightly faster than the hard wall case. Smaller polystyrene microgels particles ($R=16\text{ nm}$ and 42nm) that partially penetrated the brushes, presented a very slowed down dynamics, much more so for the smaller particles, reminiscent of size exclusion type of mechanism.

Benoit Loppinet
IESL-FORTH Heraklion Greece

Date submitted: 22 Dec 2006

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