

## Appendix

To verify that the length of the produced trajectories suffices for the loss of the conformational memory of the dendrimer and PEO molecules, we have calculated the correlation function of the fluctuations of the squared radius of gyration<sup>58</sup>

$$C_{R_g^2}(t) = \frac{\langle R_g^2(0)R_g^2(t) \rangle - \langle R_g^2 \rangle^2}{\langle R_g^4 \rangle - \langle R_g^2 \rangle^2} \quad (\text{A.1})$$

The resulted spectra for dendrimers and linear chains are presented in figure A1

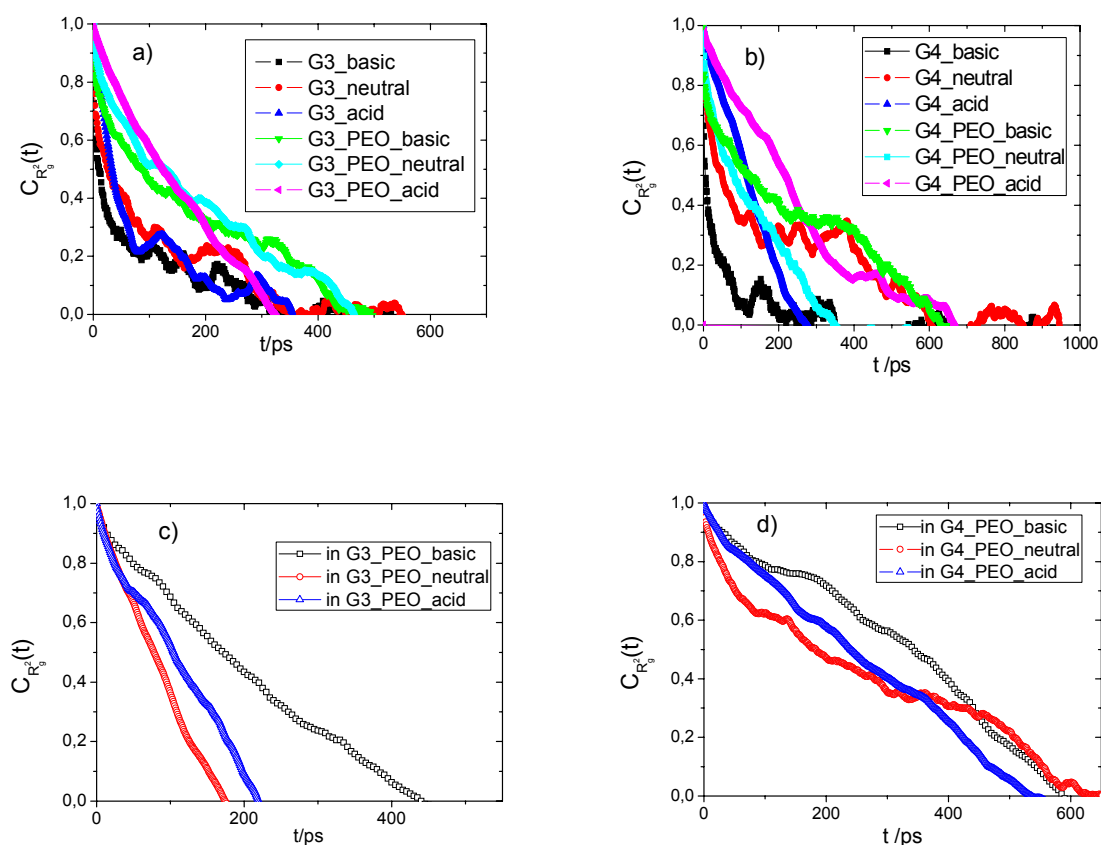


Figure A1 : Correlation functions of the squared radius of gyrations (eq. A.1) for the dendrimer ( a) G3 and b) G4 models) and linear PEO ( c) in G3 and d) in G4 models) molecules.

Evidently, in all the examined models,  $C_{R_g^2}(t)$  decays to 0 at timescales shorter than 1ns.