

# Supplementary Materials

## Structure and mechanical response of polybutylcarbosilane dendrimers confined in a flat slit: effect of molecular architecture and generation number.

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Figure S1. Interaction energy of dendrimers with the walls for different compression rates and for slits of static size.  $2R = 2R_g \times (5/3)^{0.5}$ , where  $R_g$  is the radius of gyration of the dendrimer in the initial uncompressed state.

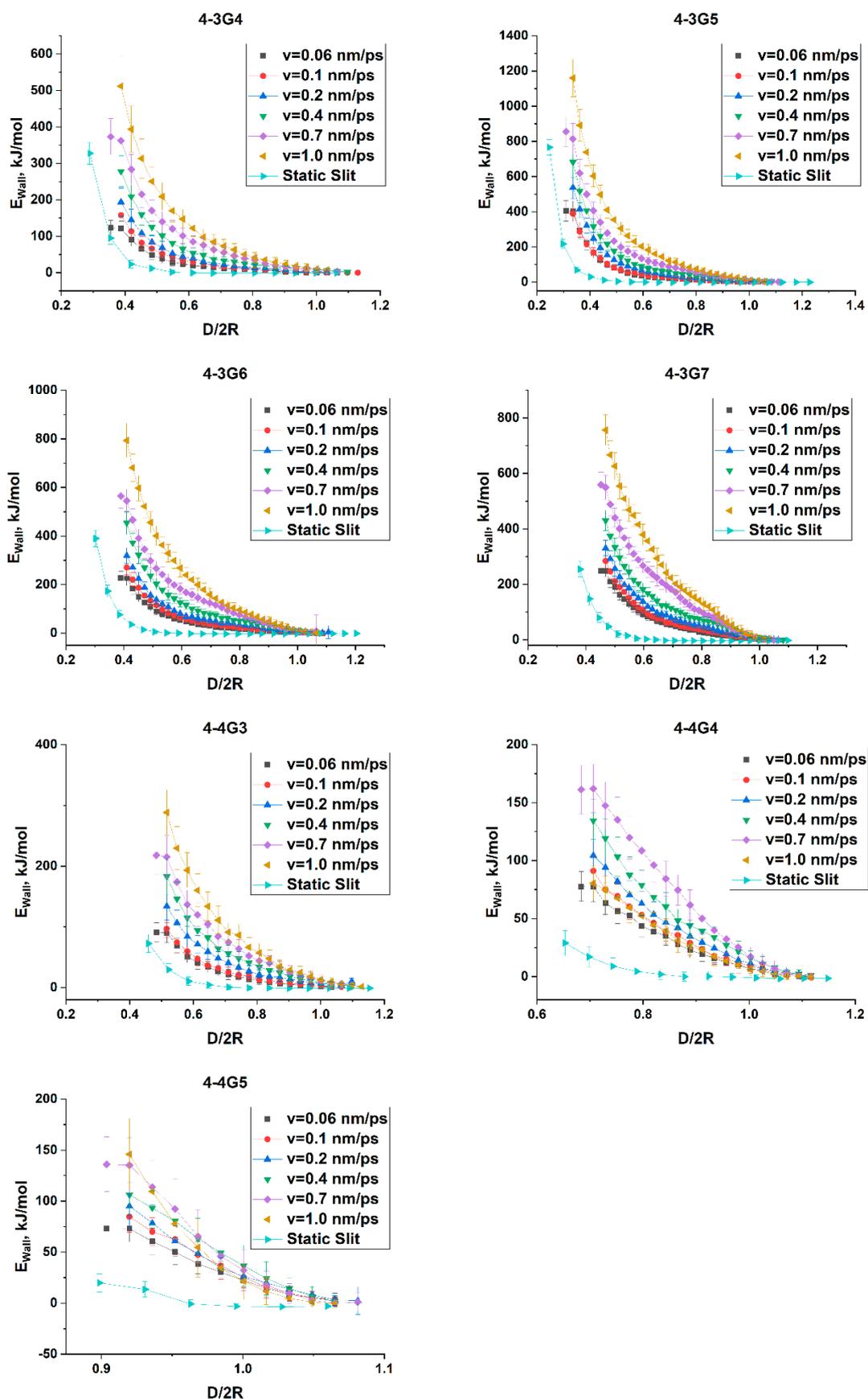


Figure S2. Distribution of bond lengths for 4-4G5 and 4-3G7 for uncompressed conformations and at  $D/2R=0.38$ . Bond lengths are normalized to the minimum of the bond potential, and distribution values are normalized to unity. The insets show the tails of the distributions on a larger scale.

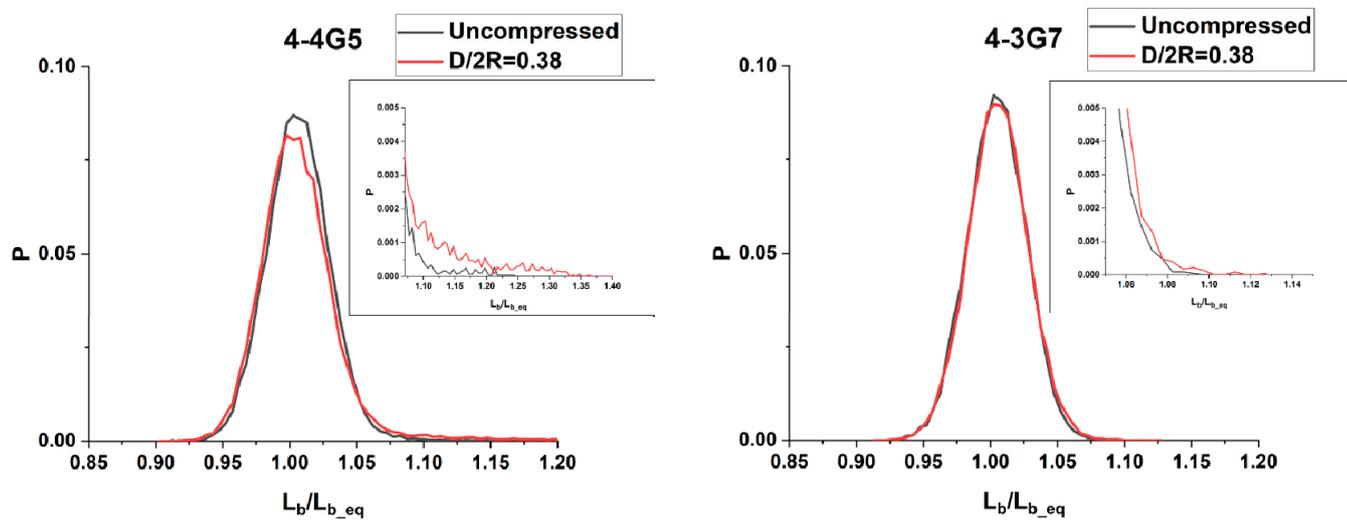


Figure S3. Dependence of the force of interaction with the walls on the distance between them. The inset shows the approximation of the simulation data by a linear dependence in the region of small deformations.

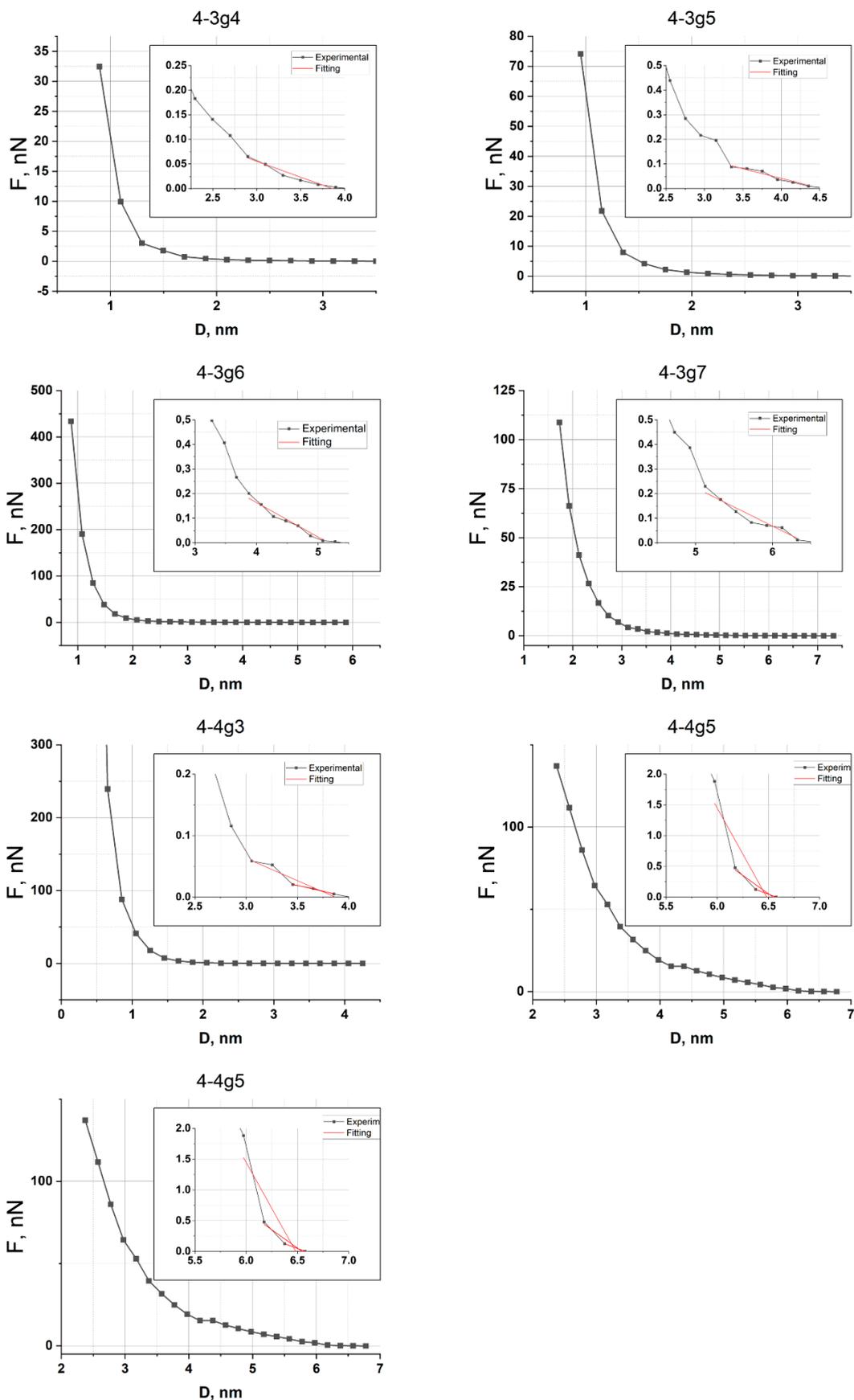


Figure S4. The absolute number of surface contacts.

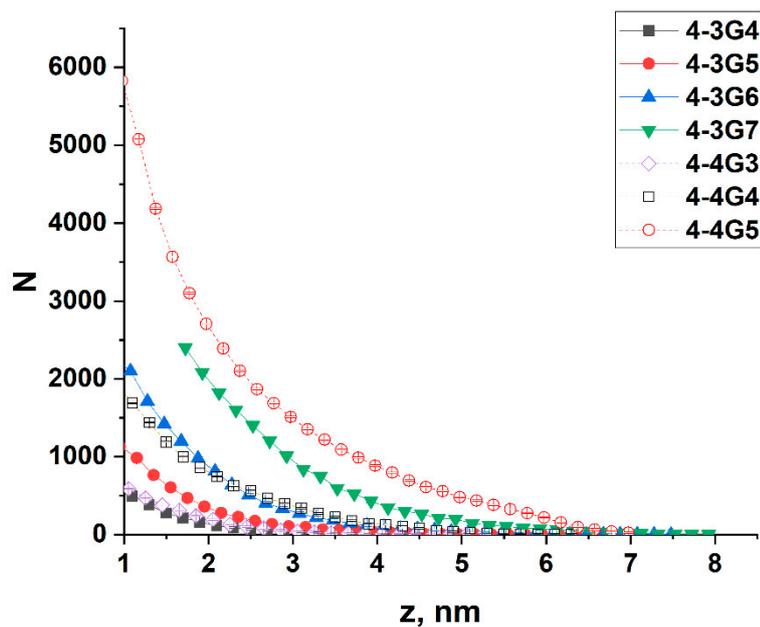


Table S1. The size of the internal region of 4-3 dendrimers,  $R_{core}$ , inaccessible to neighbors in melts, and its relative values,  $R_{core}/2R$ ,  $2R = 2R_g \times (5/3)^{0.5}$ . Data were obtained as a result of melt modeling performed in [29].

	Melt Core/2, nm	Melt Core / 2R
4-3G4	0.325	0.210
4-3G5	0.375	0.194
4-3G6	1.025	0.420
4-3G7	1.725	0.563

Figure S5. Dependence of the relative number of dendrimer atoms belonging to the  $k$ -layer in contact with the walls on the relative wall distance. Vertical dashed lines show the normalized radius of the internal dendrimer region,  $R_{\text{core}}/2D$ , inaccessible to neighbors in melts.

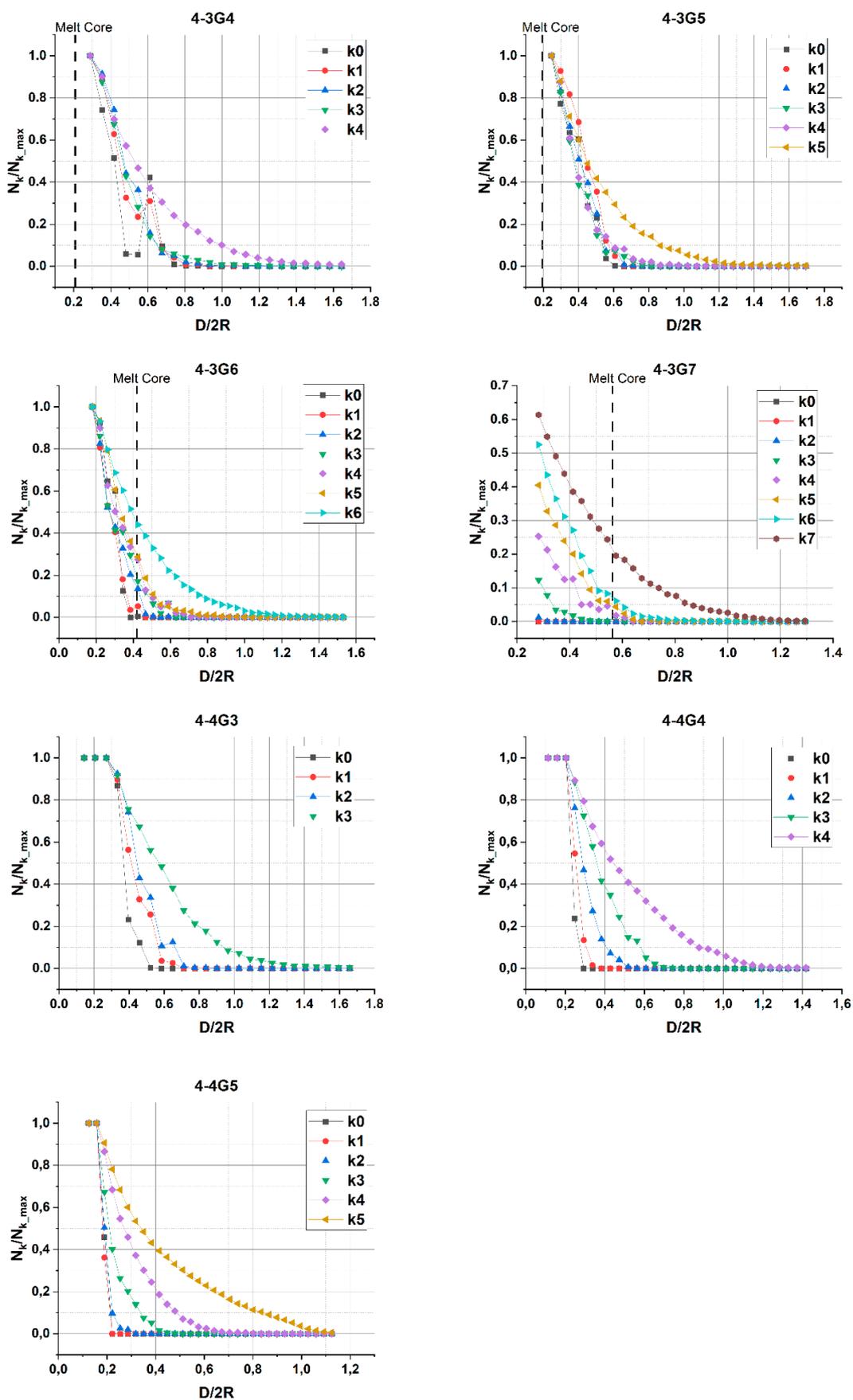


Figure S6. Density profiles along the z-axis calculated in the cylindrical region of the radius  $R_g/2$  at different  $D/2R$  as indicated.

