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Spatial organization and segregation of two self-avoiding polymers in a closed cylindrical pore YOUNGKYUN JUNG, Korea Institute of Science and Technology Information, BAE-YEUN HA, University of Waterloo — We present some results on the spatial organization and segregation of two self-avoiding polymers trapped inside a closed cylindrical pore, obtained using molecular dynamics simulations. Closed cylindrical confinement is shown to play a unique role in influencing chain miscibility and segregation dynamics. Our diagram for chain miscibility shows that under strong confinement chains segregate better, if they are shorter and the con?ning space is more asymmetric; when applied to bacterial chromosomes, it implies that chromosome miscibility depends on how they are structured inside the cell. Finally, longitudinal con?nement is also shown to have nontrivial effects on segregation dynamics; it can signi?cantly slow down segregation despite a shorter distance for each chain to travel to partially segregate.

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