Electronic Supplementary Information for Soft Matter manuscript: Single-walled carbon nanotube reptation dynamics in submicron sized pores from randomly packed mono-sized colloids

Zhao Tang¹, Shannon L. Eichmann¹, Brahim Lounis²,³, Laurent Cognet²,³, Frederick C. MacKintosh¹,⁴,⁵,⁶, and Matteo Pasquali¹,⁴,⁷,*

¹Department of Chemical and Biomolecular Engineering, Rice University, Houston, Texas 77005, USA

²Laboratoire Photonique Numérique et Nanosciences, Université de Bordeaux, LP2N, F-33405 Talence, France

³Institut d’Optique and CNRS, LP2N, F-33405 Talence, France

⁴Department of Chemistry, Rice University, Houston, Texas 77005, USA

⁵Center for Theoretical Biological Physics, Rice University, TX 77030, Houston, USA

⁶Department of Physics and Astronomy, Rice University, Houston, Texas 77005, USA

⁷Department of Materials Science and NanoEngineering, The Carbon Hub, The Smalley Institute for Nanoscale Science and Technology, Rice University, Houston, Texas 77005, USA
Figure S 1. Brownian dynamics of length-variant (6,5) chirality SWCNTs in randomly packed-colloid from 2 micron diameter silica colloid. SWCNT length is obtained from longest contour length of SWCNT backbone points. To minimize pore heterogeneity effect, Brownian dynamics of each SWCNT length comes from 5 to 15 different observations at different pore location. The averaged angular and translational MSD is the arithmetic average of each individual MSD. This Brownian dynamics with wide
SWCNT length range and large number of pore structures show a consistent scaling law with the description in text.