Supporting Information for Manuscript Entitled with

Micro-mechanics of nanostructured carbon/shape memory

polymer hybrid thin film

Ming Lei,^{‡ab} Ben Xu,^{‡b} Yutao Pei,^c Haibao Lu^{*a} and Yongqing Fu^{*b}

 a. National Key Laboratory of Science and Technology on Advanced Composites in Special Environments, Harbin Institute of Technology, Harbin 150080, People's Republic of China. E-mail: <u>luhb@hit.edu.cn</u>

b. Faculty of Engineering and Environment, Northumbria University, Newcastle upon Tyne, NE1 8ST, UK E-mail:

Richard.fu@northumbria.ac.uk

c. Faculty of Mathematics and Natural Sciences, Advanced Production Engineering — Engineering and
Technology Institute Groningen, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands
these authors contributed equally to this work.



Fig. S1 Loss Modulus E`` of PS based nanocomposites obtained from DMA.



Fig. S2 Glass transition temperature T_g of PS based nanocomposites varied with nanofiller concentration.



Fig. S3 Storage Modulus E^o of PS based nanocomposites varied with nanofiller concentration respectively at T_{low} (25°C) and at T_{high} (90°C).



Fig. S4 Loss Modulus E^{**} of PS based nanocomposites varied with nanofiller concentration respectively at T_{low} (25°C) and at T_{high} (90°C).



Fig. S5 tan δ of PS based nanocomposites varied with nanofiller concentration respectively at T_{low} (25°C) and at T_{high} (90°C).