

Supporting Information

Uniaxial and Mixed Orientations of Poly(ethylene oxide) in Nanoporous Alumina Studied by X-ray Pole Figure Analysis

Cui Su,^{†,‡} Guangyu Shi,^{†,‡} Xiaolu Li,[‡] Xiuqin Zhang,[‡] Alejandro J. Müller,^{§,¶} Dujin

Wang,^{†,‡} and Guoming Liu^{*,†}

[†]CAS Key Laboratory of Engineering Plastics, CAS Research/Education Center for Excellence in Molecular Sciences, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

[‡]Beijing Key Laboratory of Clothing Materials R & D and Assessment, Beijing Engineering Research Center of Textile Nanofiber, School of Materials Science & Engineering, Beijing Institute of Fashion Technology, Beijing 100029, China

[§]POLYMAT and Polymer Science and Technology Department, Faculty of Chemistry, University of the Basque Country UPV/EHU, Paseo Manuel de Lardizabal 3, 20018 Donostia-San Sebastián, Spain.

[¶]IKERBASQUE, Basque Foundation for Science, Bilbao, Spain.

[¶]University of Chinese Academy of Sciences, Beijing 100049, China

Corresponding to: gmliu@iccas.ac.cn

The Hermans' orientation parameter for (120) reflection was calculated by the equation¹

$$f_{(120)} = \frac{3\langle \cos^2 \psi \rangle - 1}{2}$$

where

$$\langle \cos^2 \psi \rangle = \frac{\int_0^{\pi/2} I(\psi) \cos^2 \psi \sin \psi d\psi}{\int_0^{\pi/2} I(\psi) \sin \psi d\psi}$$

Table S1. Hermans' Orientation Parameter of the (120) Reflection of Infiltrated PEO in AAO

Templates with the Same Diameter (100 nm) and Different Depths.

AAO depth (μm)	100	50	20	5
cooling rate ($^\circ\text{C}/\text{min}$)	10	10	10	10
$f_{(120)}$	0.213	0.152	0.145	0.113

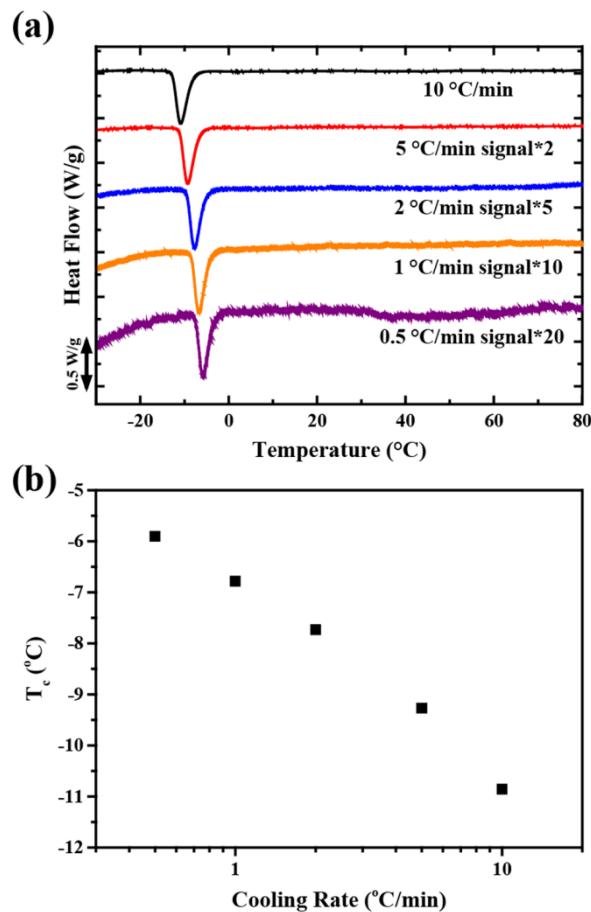


Figure S1. (a) DSC cooling curves of the infiltrated PEO in AAO template, crystallized at different cooling rate. (b) Crystallization temperature of infiltrated PEO in AAO template as a function of cooling rate. The AAO template has a pore diameter of 100 nm and a depth of 100 μm .

References:

1. Hermans, P. H.; Platzek, P. Beiträge zur Kenntnis des Deformations mechanismus und der Feinstruktur der Hydratzellulose. *Colloid Polym. Sci.* **1939**, 88, 68–72.