

Decorated MCM-41/polyethylene hybrids: Crystalline Details and Viscoelastic Behavior

María L. Cerrada^{*1}, Ernesto Pérez¹, João P. Lourenço², Artur Bento³,
M. Rosário Ribeiro^{*3}

¹Instituto de Ciencia y Tecnología de Polímeros (ICTP-CSIC). Juan de la Cierva 3, 28006 Madrid, Spain

²Centro de Investigação em Química do Algarve (CIQA). Faculdade de Ciências e Tecnologia-Universidade do Algarve. Campus de Gambelas, 8005-139 Faro, Portugal.

³Instituto de Ciência e Engenharia de Materiais e Superfícies (ICEMS) & Departamento de Engenharia Química. Instituto Superior Técnico - Universidade Técnica de Lisboa. Av. Rovisco Pais 1, 1049-001 Lisboa, Portugal

*Corresponding authors.

Tel.: +34-915622900; Fax: +34-915644853; E-mail address: mlcerrada@ictp.csic.es

Tel.: +351-218417325; Fax: +351-218419198; E-mail address: rosario@ist.utl.pt

Table S1. Parameters of the MCM-41 mesoporous materials used as fillers.

Sample	Modifying agent content (mmol/g)	S _{BET} (m ² /g)	V _p (cm ³ /g)	D _p (Å)
MCM-41	-	870 ± 5	0.72	33
MCM-41 (UA/TIBA)	2.0	625 ± 30	0.33	21
MCM-41 (UA/TIBA)	5.9	295 ± 5	0.13	18

S_{BET}: specific surface area, V_p: specific pore volume (calculated at the top of the adsorption step), D_p: average pore diameter estimated by Gurvitsch method (D_p = 4V_p/S_{BET}).

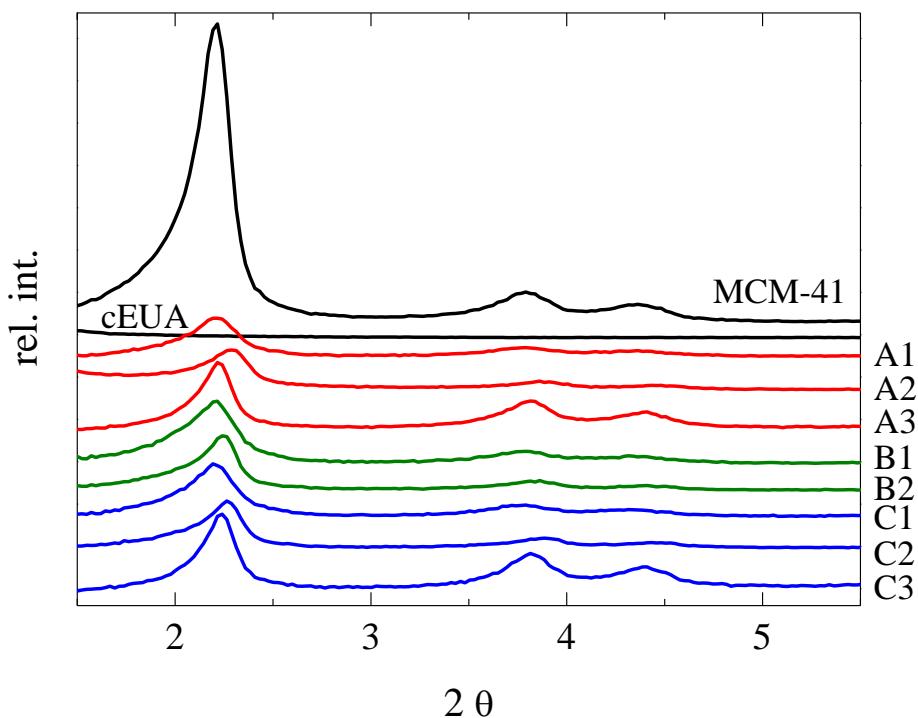


Figure S1. X ray profiles at room temperature at the middle angle region for all the synthesized hybrids as well as for MCM-41 and copolymer cEUA, these two used as references.

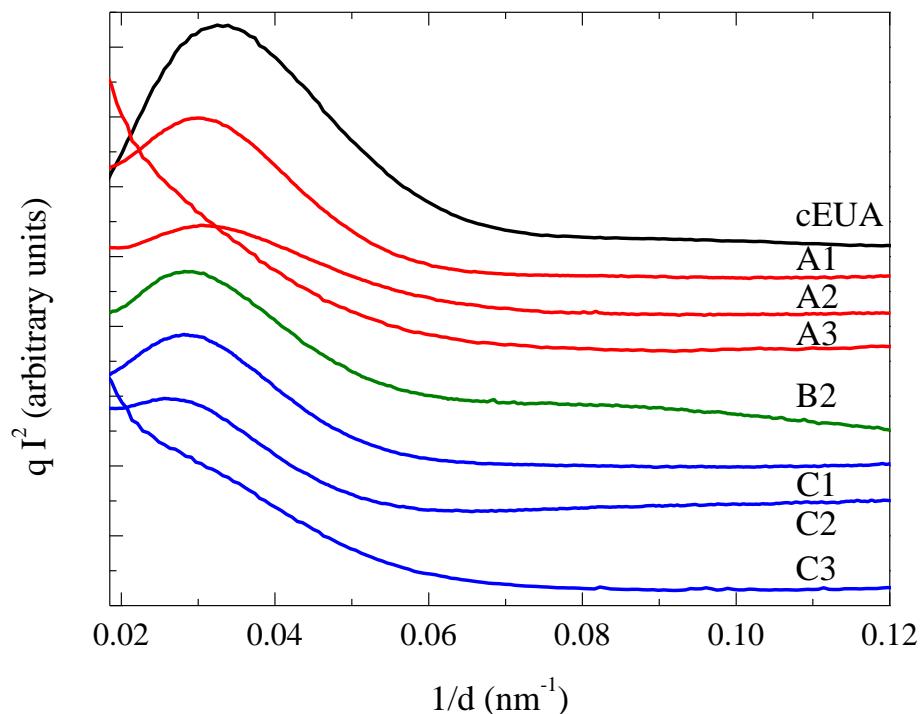


Figure S2. SAXS diffraction patterns at room temperature for the cEUA copolymer and the different hybrids.

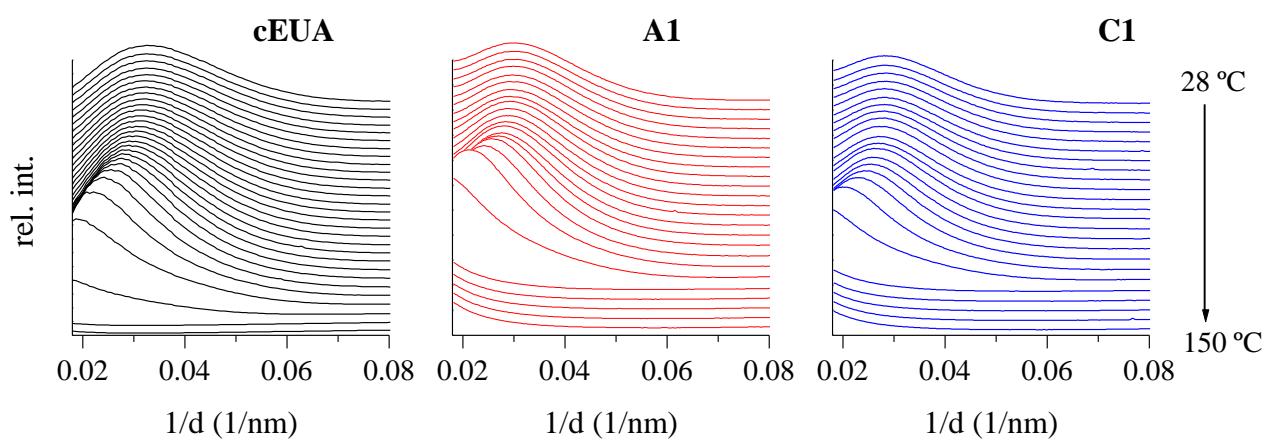


Figure S3. Real-time SAXS profiles, obtained with synchrotron radiation, for cEUA copolymer and two of the hybrids in a melting experiment at 8 °C/min. Only one frame every three is plotted, for clarity.

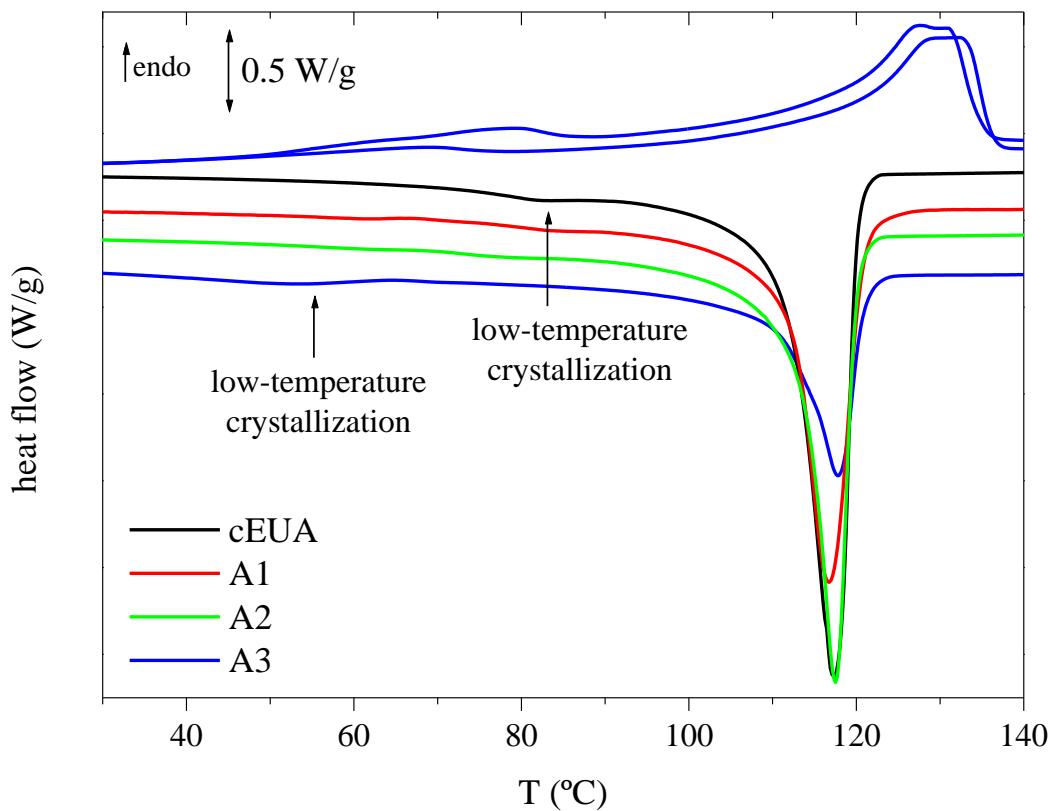


Figure S4. Complete DSC measurement for A3: first and second melting and crystallization runs. Crystallization of cEUA, A1 and A2 has been incorporated for comparative reasons.

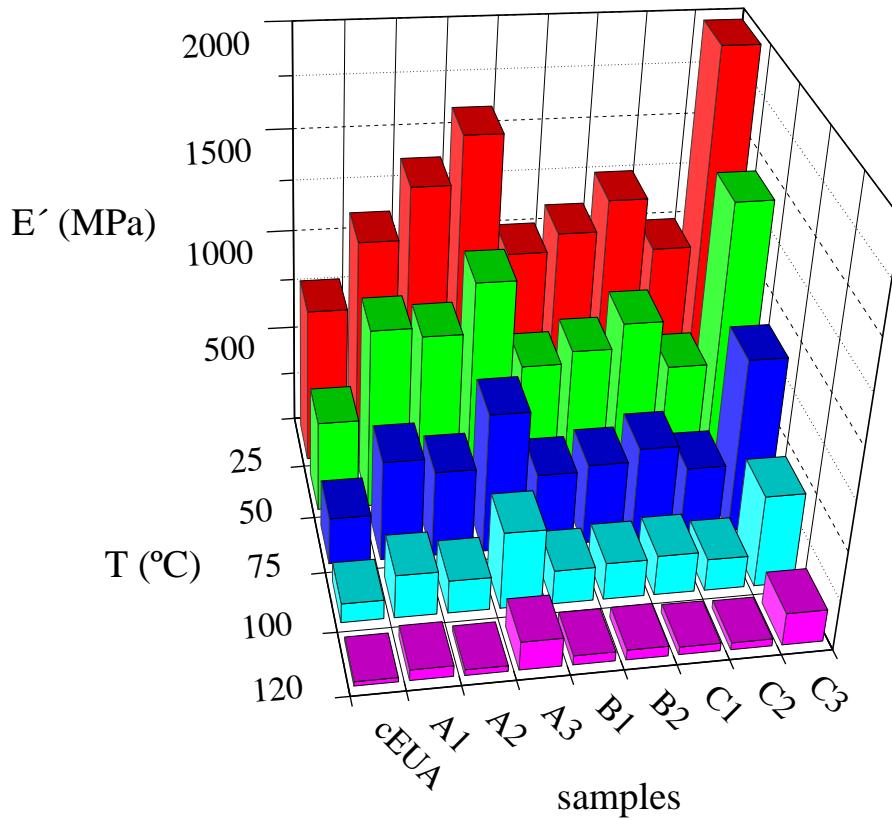


Figure S5. Variation of the storage modulus (E') at the indicated temperatures for cEUA and the different hybrids analyzed.

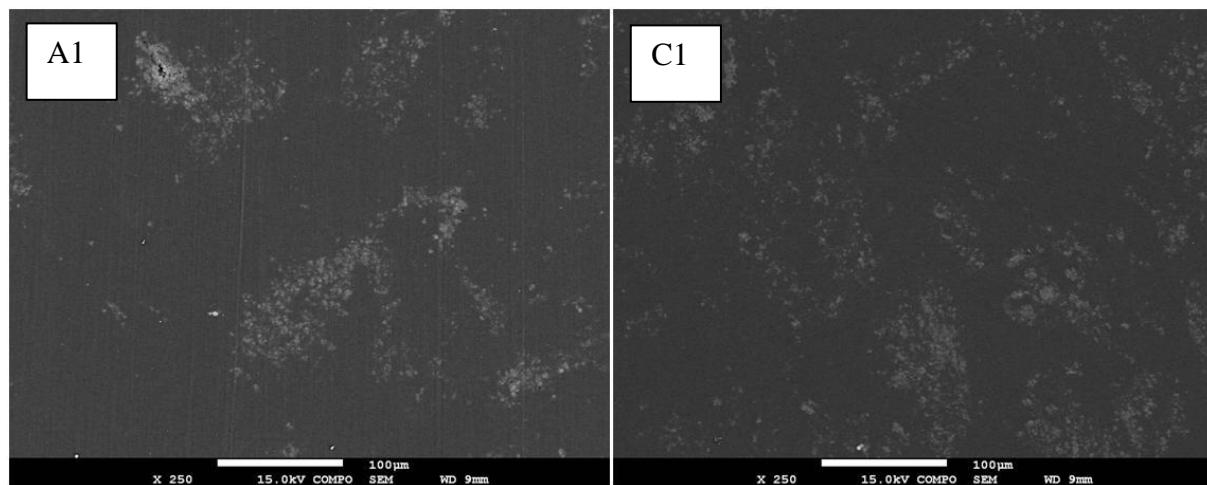


Figure S6. SEM micrographs for the A1 and C1 hybrids.