

## Supporting Information

# Alginate nanofibrous mats with adjustable degradation rate for regenerative medicine

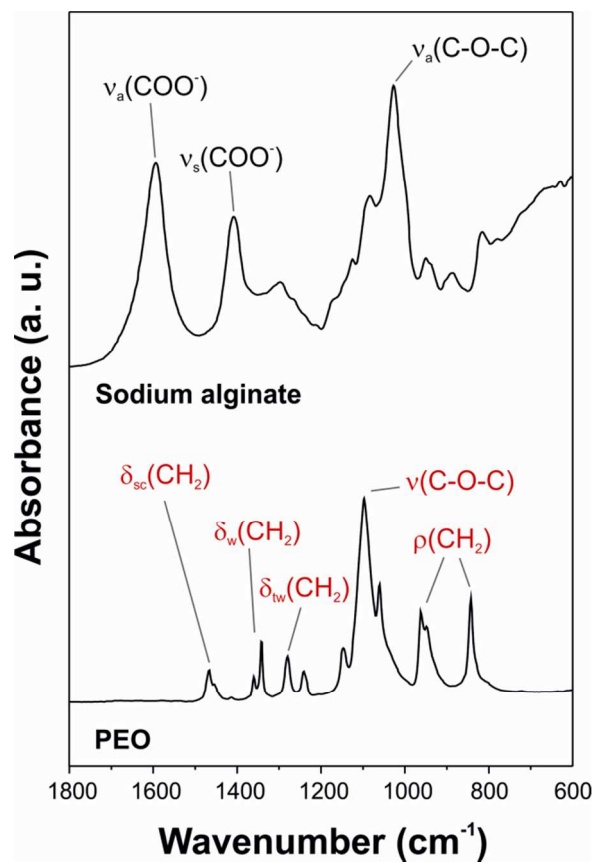
*Hadi Hajiali,<sup>\*,†,‡</sup> José A. Heredia-Guerrero,<sup>†</sup> Ioannis Liakos,<sup>†</sup> Athanassia Athanassiou,<sup>†</sup> Elisa Mele<sup>\*,†,§</sup>*

<sup>†</sup> Smart Materials, Nanophysics, Istituto Italiano di Tecnologia (IIT), via Morego 30, 16163 Genoa, Italy.

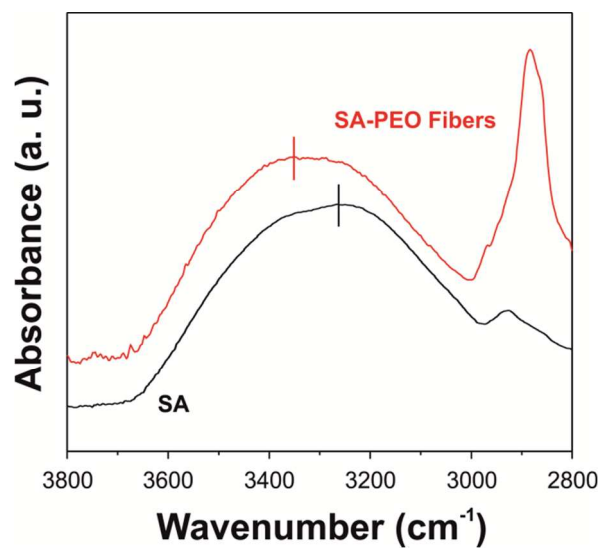
<sup>‡</sup> DIBRIS, University of Genoa, via Opera Pia 13, 16145, Genoa, Italy.

<sup>§</sup> Present address: Department of Materials, Loughborough University, Loughborough, Leicestershire, LE11 3TU. E-mail: E.Mele3@lboro.ac.uk.

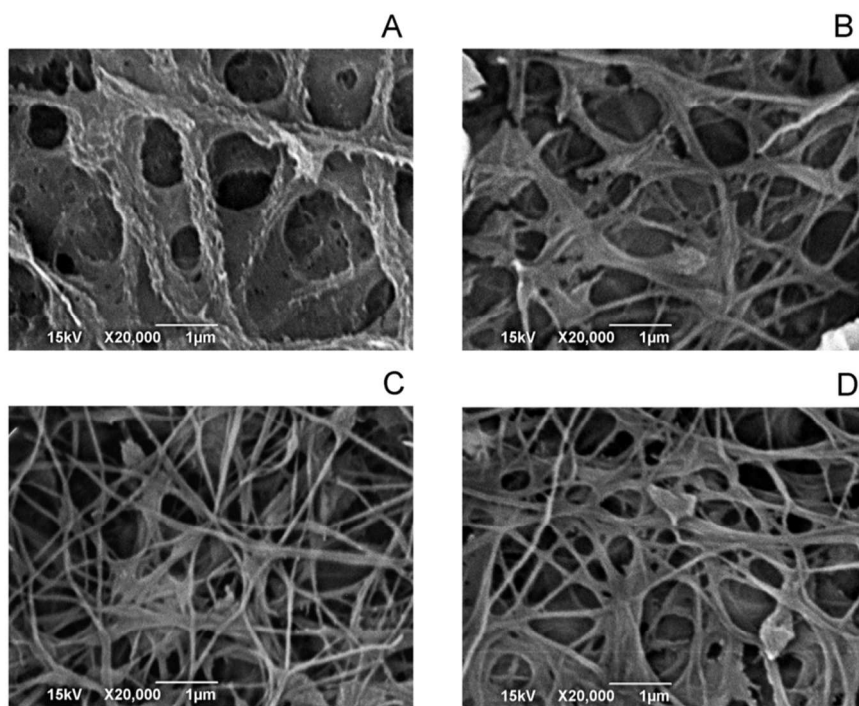
<sup>\*</sup> hadi.hajiali@iit.it; elisa.mele@iit.it



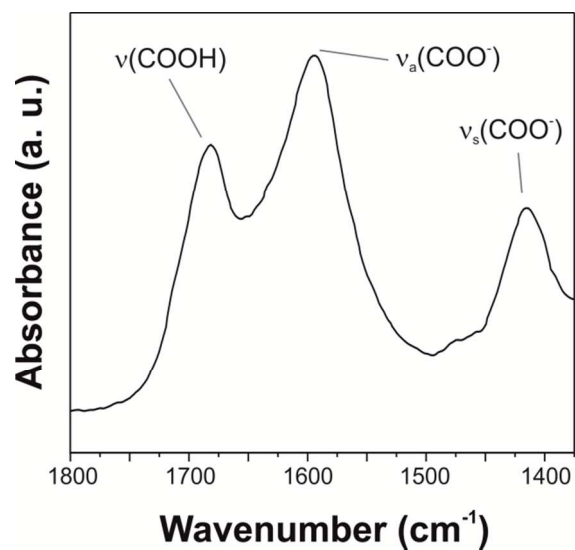
**Figure S1.** ATR-FTIR spectra of SA and PEO pure components in the 1800-600  $\text{cm}^{-1}$  region.



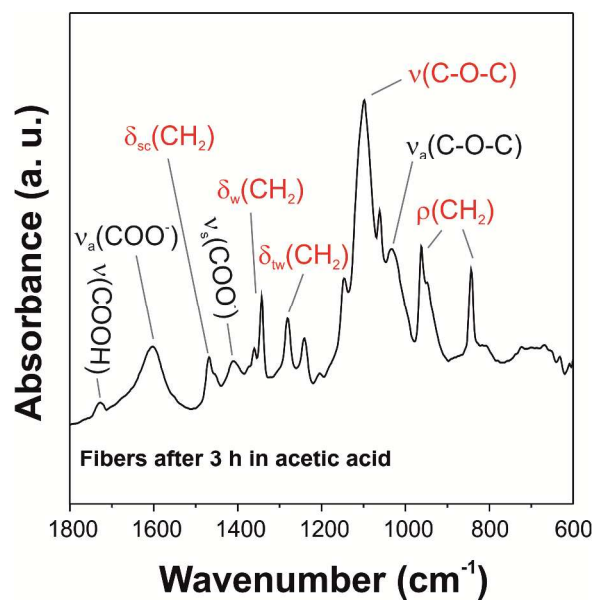
**Figure S2.** ATR-FTIR spectra of SA (black line) and SA-PEO (red line) fibers in the 3800-2800  $\text{cm}^{-1}$  region.



**Figure S3.** SEM images of the nanofibers treated with TFA for (A) 3 h, (B) 6 h, (C) 12 h, and (D) 24 h, and after 7 days of incubation in aqueous medium.



**Figure S4.** ATR-FTIR spectrum of the treated fibers after immersion in NaOH (0.1 M) in the 1800-1350  $\text{cm}^{-1}$  region. The three peaks were assigned to COOH...OH stretching (1683  $\text{cm}^{-1}$ ) and asymmetrical and symmetrical  $\text{COO}^-$  stretching modes (1595 and 1414  $\text{cm}^{-1}$ , respectively) functional groups.



**Figure S5.** ATR-FTIR spectrum of SA-PEO fibers after the acetic acid treatment (3 h). The assignment of bands ascribed to PEO is highlighted in red, while the corresponding one for SA is in black.

**Table S1.** Surface atomic composition of the produced alginate nanofibers, measured by XPS.

Atomic concentration [%]	As-prepared fibers	TFA-treated (24 h) fibers
C	69.0	59.0
O	30.3	41.0
Na	0.7	0
F	0	0