

Supplementary material

# Biocompatible Electrospun Polycaprolactone-Polyaniline Scaffold Treated with Atmospheric Plasma to Improve Hydrophilicity

Michela Licciardello <sup>1,2,3</sup>, Gianluca Ciardelli <sup>1,2,3,4</sup> and Chiara Tonda-Turo <sup>1,2,3,\*</sup>

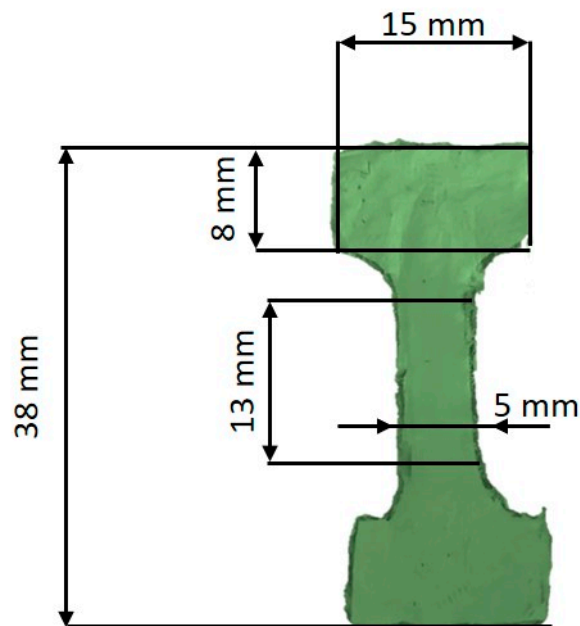
<sup>1</sup> Department of Mechanical and Aerospace Engineering, Politecnico di Torino, 10129 Turin, Italy; michela.licciardello@polito.it (M.L.); gianluca.ciardelli@polito.it (G.C.)

<sup>2</sup> Polito BIOMedLAB, Politecnico di Torino, 10129 Turin, Italy

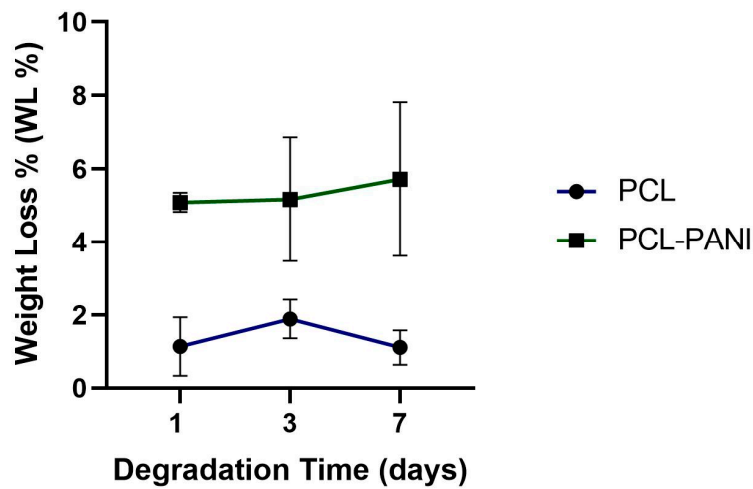
<sup>3</sup> Interuniversity Center for the promotion of the 3Rs principles in teaching and research, 56122 Pisa, Italy

<sup>4</sup> CNR-IPCF, National Research Council-Institute for Chemical and Physical Processes, 56124 Pisa, Italy

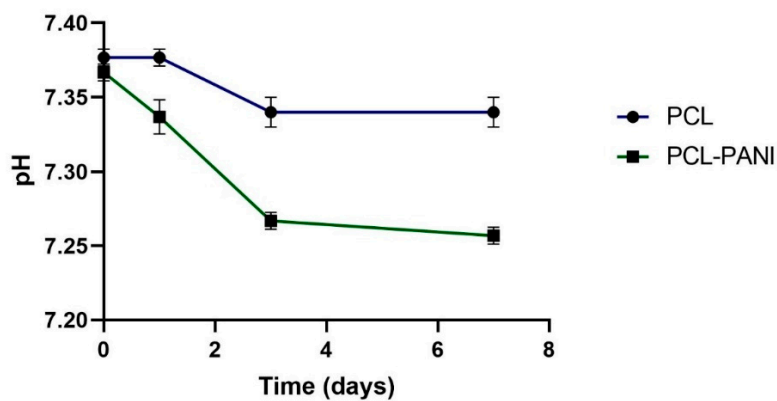
\* Correspondence: chiara.tondaturo@polito.it



**Figure S1.** Dog-bone shape sample of PCL-PANI electrospun membranes.



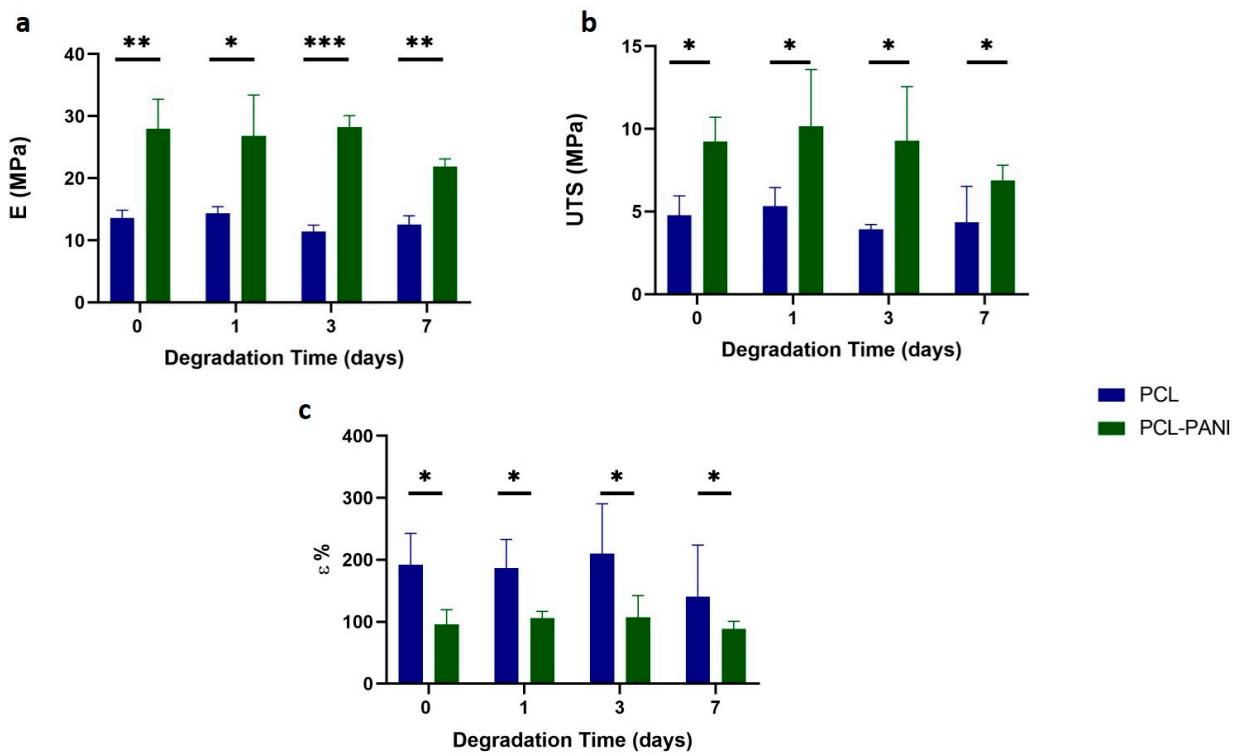
**Figure S2.** Evaluation of PCL and PCL-PANI mats weight loss % (WL %) after 1, 3 and 7 days of hydrolytic degradation.



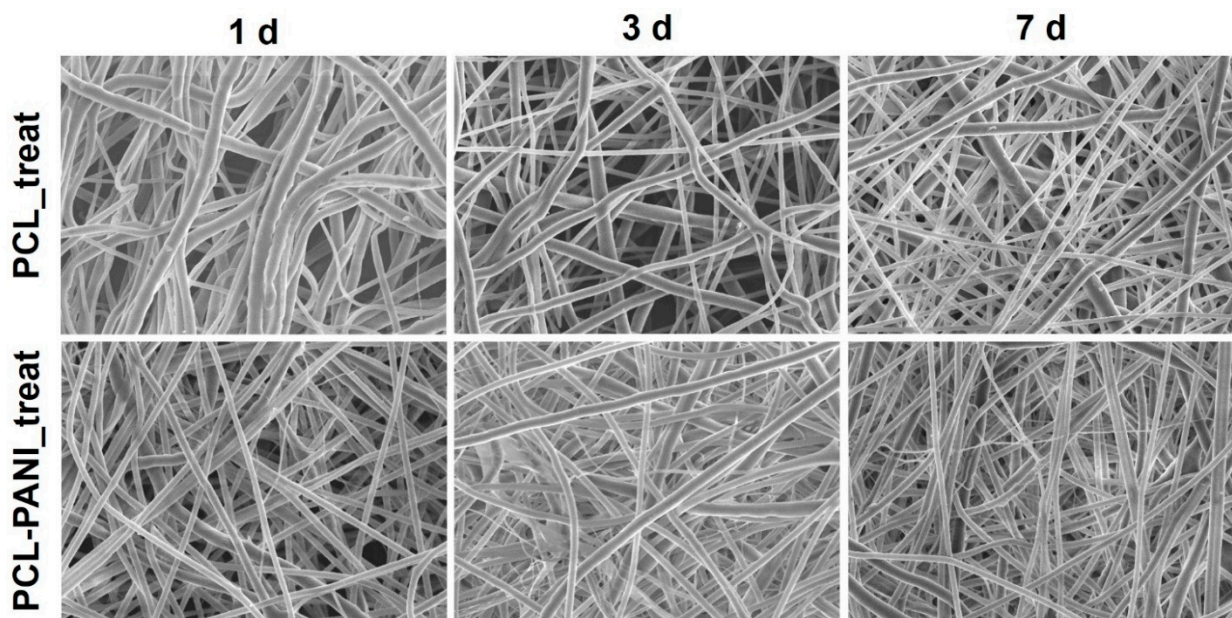
**Figure S3.** Evaluation of pH of PBS solution after 1, 3 and 7 days of hydrolytic degradation of PCL and PCL-PANI.

**Table S1.** Evaluation of PCL and PCL-PANI average diameter after 1, 3 and 7 days of hydrolytic degradation by measuring the length of 100 fibres through ImageJ software.

| Time | Diameter (mean ± standard deviation nm) |                |
|------|---|----------------|
|      | PCL_treat                               | PCL-PANI_treat |
| 1 d  | 512 ± 175                               | 332 ± 123      |
| 3 d  | 559 ± 203                               | 325 ± 102      |
| 7 d  | 520 ± 80                                | 331 ± 133      |



**Figure S4.** Evaluation of PCL and PCL-PANI mechanical stability a) Young’s modulus (E); b) ultimate tensile strength (UTS) and c) strain at failure ( $\epsilon$ ) after 1, 3 and 7 days of hydrolytic degradation. Statistical difference (\* $p < 0.05$ ; \*\* $p < 0.005$ ; \*\*\* $p < 0.0005$ ).



**Figure S5.** FESEM images of PCL\_treat and PCL-PANI\_treat mats after 1, 3 and 7 days of hydrolytic degradation (scale bar = 10  $\mu\text{m}$ , magnification = 5 K X).

**Table S2.** Evaluation of PCL\_treat and PCL-PANI\_treat average diameter after 0, 1, 3 and 7 days of hydrolytic degradation by measuring the length of 100 fibres through ImageJ software.

| <i>Time</i> | <i>Diameter (mean ± standard deviation nm)</i> |                       |
|-------------|--|-----------------------|
|             | <b>PCL_treat</b>                               | <b>PCL-PANI_treat</b> |
| <b>0 d</b>  | 571 ± 235                                      | 358 ± 83              |
| <b>1 d</b>  | 534 ± 22                                       | 343 ± 105             |
| <b>3 d</b>  | 516 ± 172                                      | 356 ± 98              |
| <b>7 d</b>  | 515 ± 197                                      | 367 ± 105             |