materials

MDPI

Supplementary Materials to Article

Accelerated Endothelialization of Nanofibrous Scaffolds for Biomimetic Cardiovascular Implants

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Section 1. Introduction

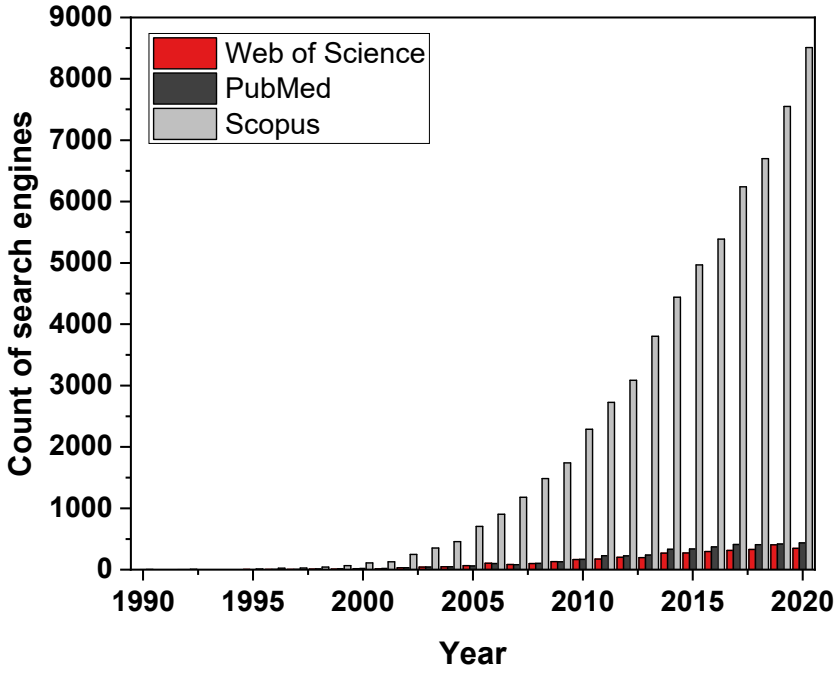

Figure S1: The annual number of publications for the last 20 years with topic "engineer* cardi* scaffold*" provided by the search engine of Scopus, PubMed and Web of Science before the 15th February, 2022.

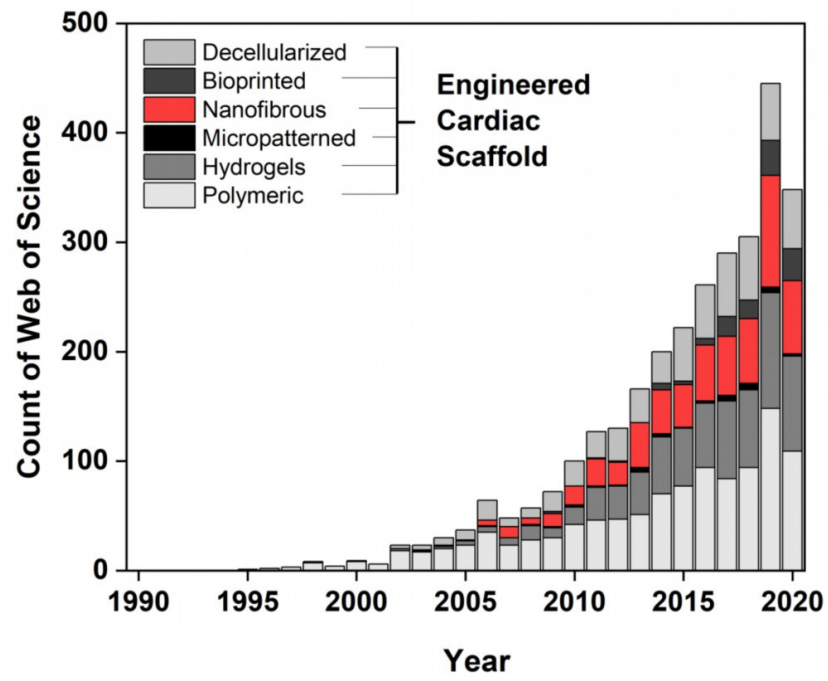

Figure S2: The annual number of publications for the last 20 years with topic "engineer* cardi* scaffold*" associated with supplementary search terms: "polymer*", "hydrogel*", "micropattern*", "nanofib*", "bioprint*" or "decellular*", provided by the search engine of Web of Science before 15th February 2022.

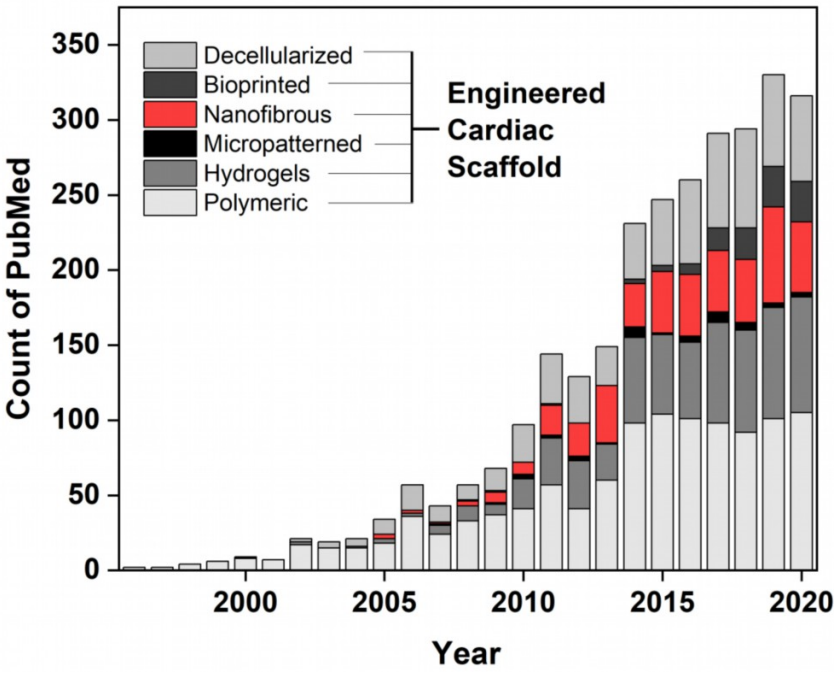

Figure S3: The annual number of publications for the last 20 years with topic "engineer* cardi* scaffold*" associated with supplementary search terms: "polymer*", "hydrogel*", "micropattern*", "nanofib*", "bioprint*" or "decellular*", provided by the search engine of PubMed before before 15th February 2022.

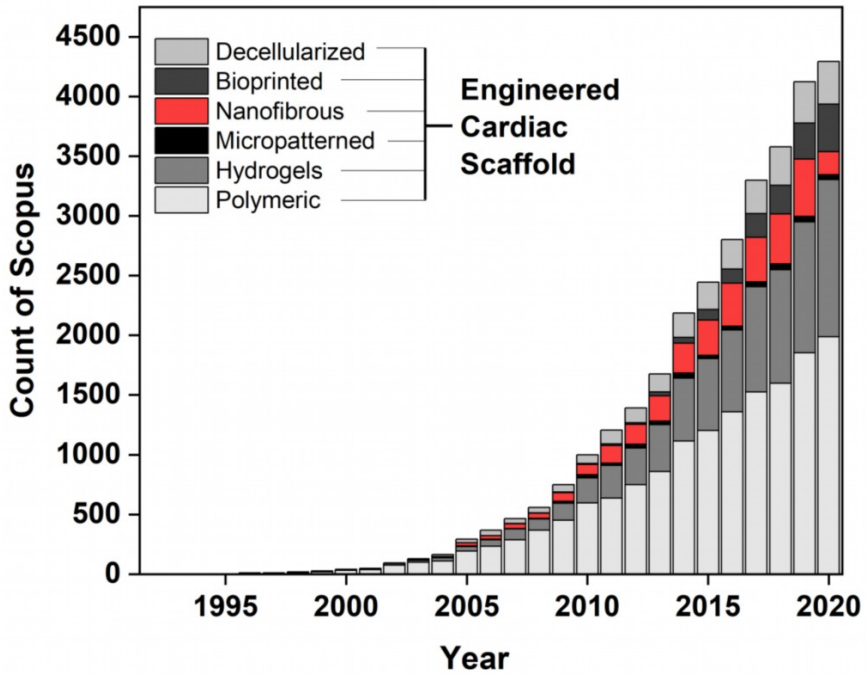

Figure S4: The annual number of publications for the last 20 years with topic "engineer* cardi* scaffold*" associated with supplementary search terms: "polymer*", "hydrogel*", "micropattern*", "nanofib*", "bioprint*" or "decellular*", provided by the search engine of Scopus before 15th February 2022.

Section 3.1. Morphology of polymeric nonwovens

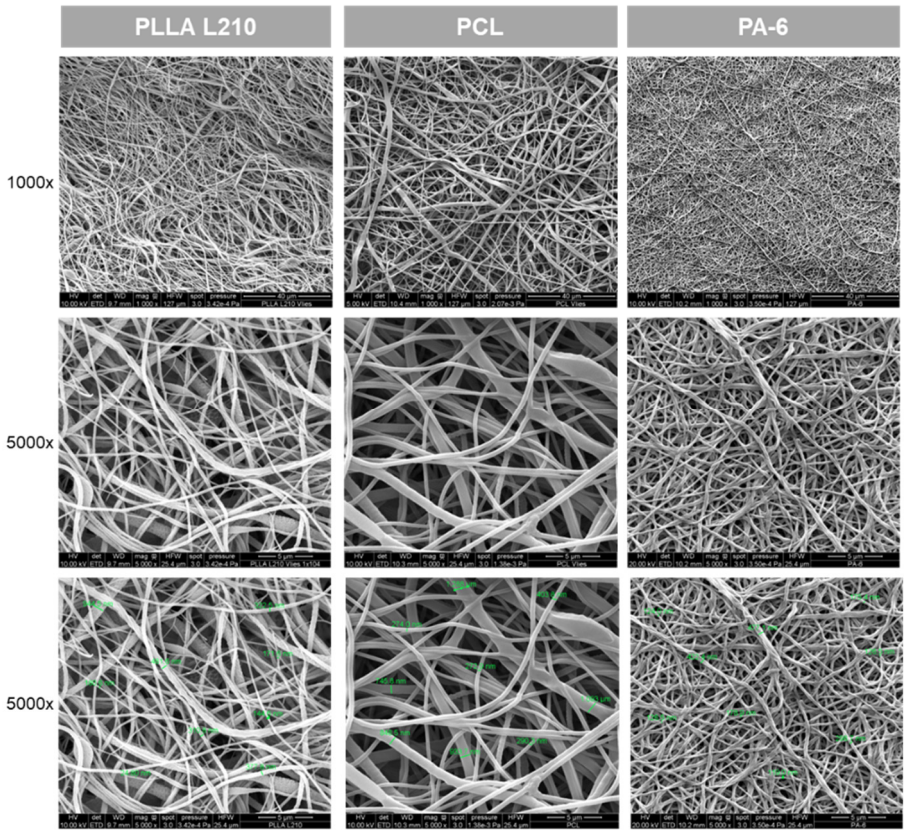

Figure S5: Representative SEM images of PLLA L210, PCL and PA-6 nonwovens at magnification 1000x and 5000x.

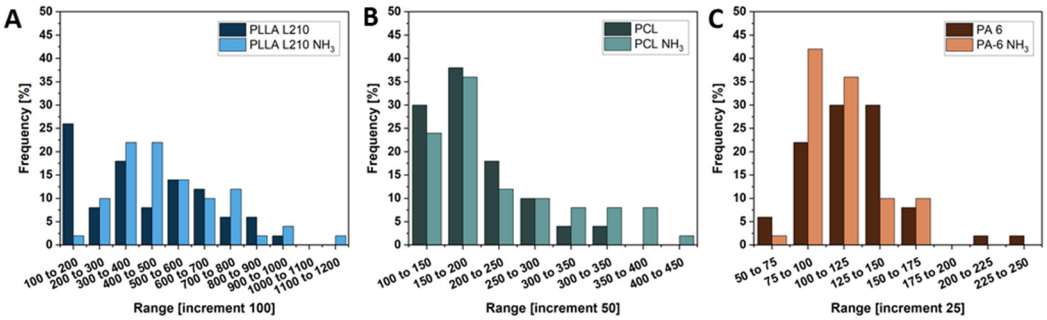

Figure S6: Frequency of the respective fiber diameters within the individually defined increments for untreated and activated (A) PLLA L210, (B) PCL and (C) PA-6 nonwovens based on 50 individual measurement points (where for each polymer 10 fibers were measured manually in 5 SEM images).

Section 3.6. Endothelial actin cytoskeleton formation on polymeric nonwovens

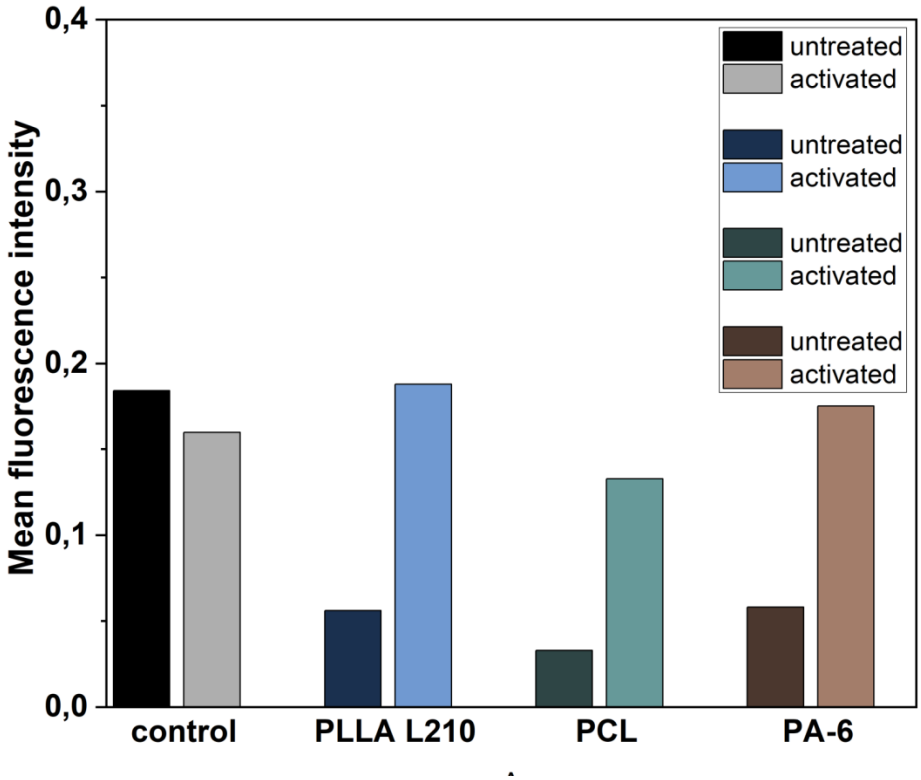

Figure S7. Fluorescence intensity of F-actin formation (phalloidin-TRITC for F-actin) in human endothelial EA.hy926 cells grown for 48 h on untreated and NH_3-plasma functionalized polymeric nonwovens and polystyrene control surface (n = 1).

Section 3.7. Expression of endothelial cell-specific PECAM-1 marker

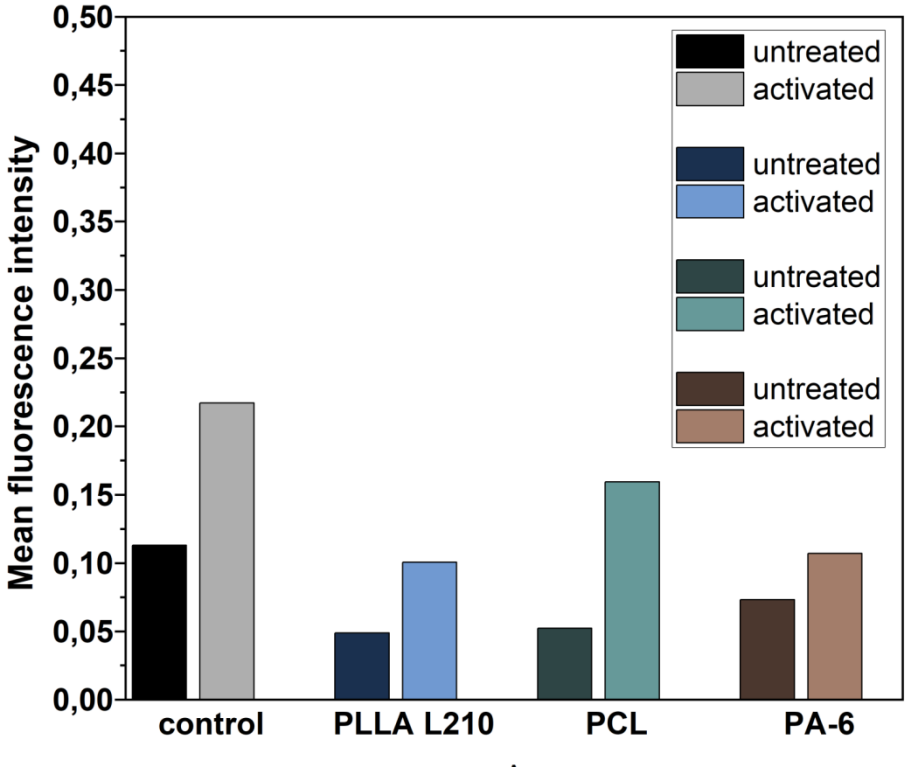

Figure S8. Mean fluorescence intensity of CD 31 expression by human endothelial EA.hy926 cellsgrown for 48 h on untreated and NH_3-plasma functionalized polymeric nonwovens (n = 1).