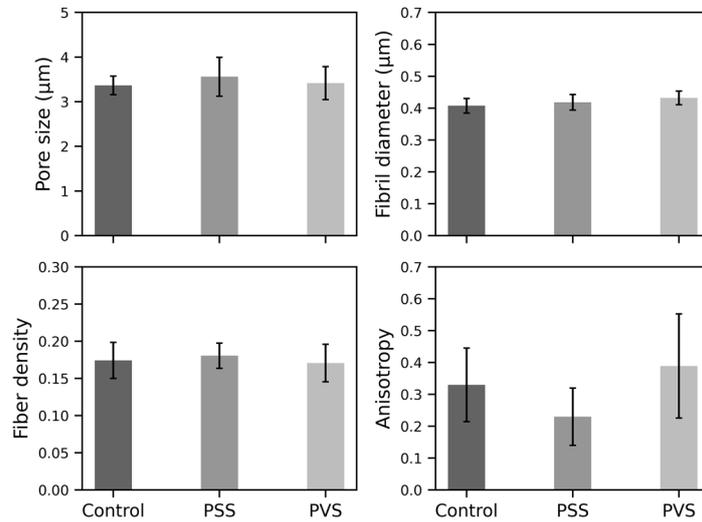


**Figure S1.** Impact of PSS and PVS functionalization on stiffness of 3D Coll I networks. Different concentration regimes of the polymers lead to either mono- or multilayer adsorption, resulting in a de- or increase in Coll I network stiffness, respectively. Data are shown as swarm plot from at least 25 single force spectroscopy measurements per sample on at least 3 independent samples.



**Figure S2.** Impact of PSS and PVS functionalization on the topology of 3D Coll I networks. Shown are the non-significant changes in pore size, fibril diameter, fiber density and anisotropy on the overall network topology upon functionalization with PSS and PVS, compared to non-functionalized Coll I networks ("control").