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# Surface properties evolution in electrospun polymer blends by segregation of hydrophilic or amphiphilic molecules

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**ABSTRACT:** Polymer blending can be used as a one-step surface modification technique to alter the wettability of electrospun mats. In this work, blends of hydrophobic thermoplastic elastomer SEBS with hydrophilic PEO or amphiphilic PEO-PPO-PEO were prepared and the resulting surface properties investigated. The low surface energy PPO block drove the segregation of the amphiphilic polymer and hydrophilization was achieved in aqueous medium. Surprisingly, surface segregation continued at room temperature during weeks after processing. The expected equilibrium blend morphology is discussed to explain the ageing results. In addition, the effect of different matrices on the mobility of the amphiphilic molecules was analyzed by comparing the segregation of PEO-PPO-PEO in rubbery SEBS and rigid PS. The low glass transition temperature of SEBS increased the free volume fraction at room temperature and facilitated the segregation.

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