In this project, coating the staple/continuous yarn layers with electrospun nanofiber and production of hybrid yarn by twisting nanofiber-coated yarn layers were aimed to support the production of bio-compatible medical yarns. The twisted hybrid yarn with the performance characteristics of the microfiber and the porosity of the nanofibers could be find usage in biomedical applications such as coating the surface of the tissue scaffolds, surgical sutures, stents and implant materials.