Nickel-tungsten alloys are excellent materials for catalyzing electrolytic hydrogen, and as protective coatings due to their superior corrosion and wear resistance. Nickel-tungsten nanowires of 30-250 nm diameter and 6 μm length were electrodeposited into polycarbonate membranes using direct and pulse current. The composition was targeted via results from thin film experiments, having tungsten percentage in the range of 33-52 wt. %. The inspection of nanowire morphology by transmission electron microscopy has shown that the increase in its diameter leads to more bumpy structure while the higher current time-on value improves nanowire smoothness. Ultrasonic treatment has proven nanowire mechanical robustness.