

Nitrogen-doped carbon nanotubes (N-CNTs) prepared *via* thermal chemical vapor deposition (CVD), were used to support ruthenium (Ru) nanoparticles made using a microwave assisted reduction technique. The amount of Ru deposited on N-CNTs was varied between 0 and 10 wt.%. The activity of the prepared nanocatalysts toward the oxygen reduction reaction (ORR) was characterized using the rotating disk electrode and voltammetry techniques. The ORR activity was higher at lower concentrations of Ru on N-CNTs. The four electron pathway of ORR is more favorable on 2Ru/NCNTs and 5Ru/N-CNTs than 10Ru/N-CNTs.