The catalysts were characterized by means of $^{13}$C solid-state NMR, Ru 3p XPS, Ru K-edge EXAFS, and TEM. The particle size of ruthenium (TEM), the oxidation state of ruthenium (XPS), and the Ru–Ru coordination number (EXAFS) remained unchanged after the surface modification. In addition, $^{13}$C NMR spectroscopy confirmed that the carbene carbon was directly attached to the ruthenium nanoparticles.