EXP KH025:

In experiment KH025, the particle size (10-100 µm) of synthesized catalysts Ce0.495Sn0.495Pd0.01O2-(Cat 4) and Ce0.20Sn0.79Pd0.01O2-(Cat 6) was decreased since the stabilization of micron-sized Pickering emulsion droplets requires particle sizes <1 μm. For that purpose, a Resch PM100 planet ball mill equipped with metal balls (d = 8 mm, 500 rpm, 10 min milling time) was used for dry milling of powdered Ce0.495Sn0.495Pd0.01O2- and wet milling of Ce0.20Sn0.79Pd0.01O2-, respectively. After milling, the coarse and fine fractions of Ce0.495Sn0.495Pd0.01O2- particles were also separated via sedimentation. For this purpose, 2 g of catalyst were suspended in 1 L water, the particles were de-aggregated by ultrasonic treatment and left to sediment. After a sedimentation time of 35 min, the upper half of the suspension was removed with a pipette and fractions were dried in a muffle furnace (120 °C until dryness, then at 350 °C overnight). The fine fraction of Ce0.495Sn0.495Pd0.01O2- was obtained in 20% overall yield. Obtained fine fraction of Ce0.495Sn0.495Pd0.01O2- and Ce0.20Sn0.79Pd0.01O2- were analyzed regarding particle size distribution (Laser Diffraction, HELOS Sympatec), specific surface area according to Brunauer-Emmett-Teller (nitrogen physisorption, ASAP 2000) and density (He-pycnometry, SYLAB Accupyc).