Autor(en) des Beitrags:
Mayrhofer, Karl J. J.; Hanzlik, Marianne; Arenz, Matthias

Titel des Beitrags:
The influence of electrochemical annealing in CO saturated solution on the catalytic activity of Pt nanoparticles

Abstract:
Combining nondestructive, identical location-TEM (IL-TEM) with rotating disk electrode (RDE) measurements, the influence of different treatment procedures on the catalytic activity of C supported Pt nanoparticles is probed. IL-TEM shows that the treatment of the catalyst has only minor influence on its structure or the particle shape and size; in particular no treatment induced particle agglomeration is obsd. At the same time, both CO stripping and CO bulk measurements are significantly influenced by the electrochem. treatment. In consistence with previous studies this can be explained by the removal of defects in the CO adlayer structure while cycling in CO satd. soln. In contrast, however, CO annealing has no impact on the oxygen redn. reaction in the mixed kinetic-diffusion control potential region. [on SciFinder(R)]

Stichworte:
Transmission electron microscopy (effect of electrochem. annealing in CO satd. soln. on catalytic activity of C-supported Pt nanoparticles in combining nondestructive identical location-TEM with rotating disk electrode measurements) Oxidation catalysts (electrochem., carbon supported platinum nanoparticles and effect of CO annealing for CO) Annealing (electrochem. effect of electrochem. annealing in CO satd. soln. on catalytic activity of C-supported Pt nanoparticles in combining nondestructive identical location-TEM with rotating disk electrode measurements) Oxidation
Adsorbed substances (of CO on carbon supported platinum catalyst and effect of CO annealing) Surface structure (of carbon supported platinum catalyst and effect of CO annealing) Reduction (of oxygen on CO-annealed carbon supported platinum catalyst) Nanoparticles (platinum effect of electrochem. annealing in CO satd. soln. on catalytic activity of C-supported Pt nanoparticles in combining nondestructive identical location-TEM with rotating disk electrode measurements) electrochem annealing carbon monoxide satd soln catalyst platinum nanoparticle

Kongressstitel: CAN 151:207299 72-2 Electrochemistry Technische Universitaet Muenchen, Garching, Germany. Journal 0013-4686 7440-44-0 (Carbon) Role: CAT (Catalyst use), USES (Uses) (effect of electrochem. annealing in CO satd. soln. on catalytic activity of C-supported Pt nanoparticles in combining nondestructive identical location-TEM with rotating disk electrode measurements); 630-08-0 (Carbon monoxide) Role: NUU (Other use, unclassified), PEP (Physical, engineering or chemical process), PROC (Process), USES (Uses) (effect of electrochem. annealing in CO satd. soln. on catalytic activity of C-supported Pt nanoparticles in combining nondestructive identical location-TEM with rotating disk electrode measurements); 7601-90-3 (Perchloric acid) Role: NUU (Other use, unclassified), USES (Uses) (electrochem. oxidn. of CO on carbon supported platinum catalyst in HClO4 soln. and effect of CO annealing); 7782-44-7 (Oxygen) Role: RCT (Reactant), RACT (Reactant or reagent) (electrochem. redn. on CO-annealed carbon supported platinum catalyst); 7440-06-4 (Platinum) Role: CAT (Catalyst use), USES (Uses) (nanoparticles; effect of electrochem. annealing in CO satd. soln. on catalytic activity of C-supported Pt nanoparticles in combining nondestructive identical location-TEM with rotating disk electrode measurements)

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