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Acknowledgments: This conference is held in honour of Prof. Dragan Uskoković's 70th birthday.



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P.S.A.16

PLATINUM NANOPARTICLES PREPARED BY WATER IN OIL MICROEMULSION METHOD

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Recent advances in design and preparation of Pt-based nanocatalysts include control of shape, composition and nanoscale structure of platinum. In the present study Pt nanoparticles were prepared by w/o microemulsion method, using Polyethyleneglycol-dodecylether (BRIJ®30) as a surfactant, and the same method was used with addition of HCl in the water phase. Addition of HCl influenced the structure and electrocatalytic properties of nanoparticles. Both catalysts were supported on Vulcan XC-72R carbon. Supported and unsupported catalysts were characterized electrochemically using cyclic voltammetry, and by CO oxidation. Supported catalysts were analysed by TGA method, and surface morphology of nanoparticles was investigated using microscopy techniques. Furthermore, their electrocatalytic activity for oxidation of small organic molecules was examined.

P.S.A.17

SINTERING OF CORDIERITE IN THE PRESENCE OF MoO₃ AND CRYSTALLIZATION ANALYSIS

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Cordierite (MAS) is difficult to sinter because of the very narrow sintering temperature range (1300-1400°C). Because a low temperature process is desirable, it is necessary to find functional ads which can allow easier sintering process at lower temperature. The influence of MoO₃ on the preparation process of cordierite ceramics was investigated. 2MgO-2Al₂O₃-5SiO₂ was researched by sintering followed binary systems: MgO/MoO₃, Al₂O₃/MoO₃ and SiO₂/MoO₃ (all sintered at 850°C and 1100°C, sintering time 2h). Composition of these systems was 80% of oxide and 20% MoO₃. The effects of sintering, the composition and morphology were followed by X-ray diffraction, SEM microscopy and EDS analysis. It has been found that MoO₃, beside liquid phase, forms intermediary unstable compounds with MgO and Al₂O₃, which is the significance information for further research. MAS ceramics were sintered with 20% MoO₃ at 1100°C, 1200°C and 1300°C, during 2h.