

Poster Presentation

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Withdrawn - Investigation of metal supported MCF catalysts using PDF technique

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Functionalisation of silica catalysts (e.g. MCF) supported by anchoring of organosilanes (e.g. aminopropylalkoxysilanes) may change the catalytic properties of the system and also can be used for the further grafting of noble metals [1-2]. In the case of metal loading, in the following calcination process thermal activation and thermal transformation take place leading to the sintering of metal particles, which results in creation of bigger metal crystals. The pair distribution function (PDF) technique is a powerful tool for studying amorphous, crystalline and partially crystalline materials [3]. It bases on model free Fourier transform of X-ray powder diffraction data, and gives the probability of finding any two atoms at a given interatomic distance. A long range order is not necessary and nanostructured materials may be investigated without constraints of conventional crystallographic methods. Structural changes of support (mesoporous cellular foams(MCF))and active sites of new series of metal catalysts (Au, Mo, Nb, Zr) were investigated using PDF technique. All data were collected at ID15 beamline at ESRF: a)catalysts at different steps of synthesis, before and after reactions – measurements in static conditions; b) calcinations processes and in-situ oxidation reactions – measurements at different temperature and with gas flow at ambient pressure. Acknowledgements: National Science Centre in Poland (Project NCN–reg.no.2013/10/ST5/00642) is acknowledged for the partial financial support.

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