Pore former induced porosity in LSM/CGO cathodes for electrochemical cells for flue gas purification - DTU Orbit (15/12/2018)

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In this study the effect of the characteristics of polymethyl methacrylate (PMMA) pore formers on the porosity, pore size distribution and the air flow through the prepared lanthanum strontium manganate/gadolinium-doped cerium oxide (LSM/CGO) cathodes was investigated. Porous cathodes were obtained and the highest porosity measured was 46.4% with an average pore diameter of 0.98 μm. The air flow through this cathode was measured to 5.8 ml/(min mm²). Also the effect of exposure time to the solvent was tested for the most promising PMMA pore former and it was found that the average pore diameter decreases as a result of elongated exposure. Also prolong milling of the LSM powder was found to decrease the porosity of the final cathode and milling time should be highly controlled in order to obtain as porous cathodes as possible.

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