Optimizing the Performance of Porous Electrochemical Cells for Flue Gas Purification using the DOE method - DTU Orbit (17/03/2019)

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The DOE model was used to improve the performance of cells for electrochemical gas purification. Three factors were chosen: the amount of graphite, the Lanthanum Strontium Manganate/Gadolinium-doped Cerium oxide weight % ratio, and the Lanthanum Strontium Manganate pre-calcination temperature (with or without Lanthanum Strontium Manganate calcinated at 1000 °C). The effects of the following physical properties were measured: porosity, pore size, shrinkage, and conductivity. The sintered tapes were also characterized with scanning electron microscopy. Graphite was added as a pore former. The work shows, that a change in a factor not only changes the performance property that one would expect, but also influence other properties.

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