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Structural and electrical inwestigations on LNCO

The Main goal of the presentation is to show the results of the work on the cathode material LiNi0.8Co0.2O2 (LNCO), which can be used in H-SOFCs (proton conducting solid oxide fuel cells). For those kind of cells the best properties of appropriate cathode material are found in so-called triple conducting oxides (which conduct oxygen ions, protons, and electrons simultaneously).
The electrical properties were tested using four point method in dry and wet oxygen and also in hydrogen atmospheres. The microstructure of the samples were studied by SEM, which allowed to assess the shape and size of crystallites on the surface.
As mentioned, LNCO has great properties as a cathode material so in the future, it is planned to create a composite with a sample of the formula BaZr0.1Ce0.7O3 - as anode. The connection of those materials bring new solid oxide fuel cells with proton conducting electrolytes. The material under investigation should be examined for porosity and carry out impedance tests.

Primary author: Ms WICIAK, Katarzyna (Gdansk University of Technology)

Presenter: Ms WICIAK, Katarzyna (Gdansk University of Technology)

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