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Determining the Lanthanum Chromite Zeta Potential in Aqueous Media

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Lanthanum Chromite may be used as interconnect for SOFC's applications due to its particular intrinsic properties as stability in both oxidant and reducing environments and electrical conductivity. However to manufacture these devices that generally present complex shapes as grooved plates and fine pipes, they are necessary the use of the conformation techniques such as screen printing, slip casting, tape casting, extrusion moulding, etc. that are related with colloid processing. Independent of the processing techniques chosen the control of the suspension conditions is important to obtain reproducibility and homogeneous products as final result. In this sense, all contribution to understand the behaviour of the LaCrO_3 fine particles in liquid suspension as the surface state using the Zeta's Potential concepts may supply information by the forecast of the behaviour during the shaped processing. The aqueous suspensions behaviour was studied utilizing doped lanthanum chromite powders, attained by combustion synthesis. The electrophoretic mobility measurements of particles in suspension, prepared with the different conditioned powders were made. The electrolyte compositions as function of the pH varying from 2 to 12 were tested. The Zeta potentials and the stability conditions for stable suspensions prepared were determined. The viscosity curves are also appraised.