CE-17 EFEITO CATALÍTICO DO CeO_2 SOBRE A Pt NA REAÇÃO DE REAÇÃO DE REDUÇÃO DO OXIGÊNIO PARA APLICAÇÃO EM CÉLULAS A COMBUSTÍVEL TIPO PEM

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Palavras-chave: *rare earths, ORR, fuel cell*

Late works showed that rare earths added to platinum as co-catalyst increase the catalytic effect of platinum. However, this catalysts are prepared trough various synthesis methods. In this work catalyst Pt/C:CeO_2, ratio 90:10, 80:20, 70:30 were prepared with a physical mixture and tested in a electrochemical cell. Results have show that the rare earth Ce increases the effect of platinum as catalyst to the oxygen reduction reaction and opens a path to be useful in fuel cell applications.

CE-18 ELETRO-OXIDAÇÃO DE ETANOL SOBRE PtSnCu/C e Pt/C PREPARADOS POR REFLUXO DE ETANOL

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Palavras-chave: *PtSnCu, Pt, eletrocatálise, células a combustível*

The objective of this work is the development electrocatalysts for ethanol oxidation in lower potential compared with platinum. The PtSnCu/C and Pt/C catalysts were prepared by ethanol reflux and these materials were characterized by X-ray diffraction. XRD analysis showed a solid solution of Sn in the face centered cubic (fcc) Pt and SnO_2. The peaks were shifted to higher values of 2θ with respect to the material of Pt / C, which indicates the insertion of the second and third metal in the platinum lattice. The activity for the ethanol oxidation reaction by cyclic voltammetry methods shown lower onset potential for PtSnCu / C catalyst for the ethanol oxidation reaction also showed higher current values across the range of potential studied in comparison with Pt/C.