

CAT-07 THE ELECTRO-OXIDATION OF ISOTOPICALLY LABELED GLYCEROL AS A PROOF OF THE CLEAVAGE OF C-C CHAIN ON PT SURFACES

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Palavras-chave: *Glycerol electro-oxidation, in situ FTIR, isotopically labeled glycerol, production of CO₂*

This work presents the first in situ FTIR study with isotopically labeled glycerol on polycrystalline platinum and reveals new information concerning the glycerol C-C bond cleavage and the behavior of ¹³CO₂ and ¹²CO₂ as electro-oxidation products. The electro-oxidation of isotopically labeled glycerol generates both ¹³CO₂ and ¹²CO₂ and indicates that glycerol is able to dissociate on Pt. The oxidation of -¹³CH₂OH is easier than that of the central group. Results are interpreted in terms of a more favorable position of -¹³CH₂OH groups to react with Pt-OH_{ad} species.

CAT-08 PREPARAÇÃO DE ELETROCATALISADORES PtAuSn/C VIA REDUÇÃO POR FEIXE DE ELÉTRONS PARA A OXIDAÇÃO ELETROQUÍMICA DO ETANOL

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Palavras-chave: *PEMFC, etanol, eletrocatalisadores, Pt, Au, Sn, oxidação*

PtAuSn/C electrocatalysts (20 wt.% metal loading) were prepared in water/2-propanol using electron beam irradiation. The diffractograms of the PtSn/C and PtAuSn/C electrocatalysts showed peaks associated to Pt face-centered cubic structure. The materials were tested in the electro-oxidation of ethanol in an acidic PEMFC. The activity of the electrocatalysts for alcohol electro-oxidation in acid medium showed that PtAuSn/C electrocatalysts had a higher performance than PtSn/C E-TEK commercial.