

Electrocatalytic oxidation of small organic molecules

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The goal of this presentation is to introduce recent progress in electrocatalysis of small organic molecules. Of late, environmental concerns and new regulations have given a renewed stimulus to the development of fuel cell powered devices and instruments. In particular, direct liquid fuel cell research has now established a fairly detailed picture of the chemistry involved in the electrocatalytic oxidation of C_1 fuels such as carbon monoxide, formaldehyde, formic acid and methanol on noble metal electrodes. The present work intends to contribute to our understanding of the electro-oxidation of C_1 molecules. It starts with the relatively simple CO oxidation, and moves on to formic acid, formaldehyde and methanol, using both pure and modified anode materials.