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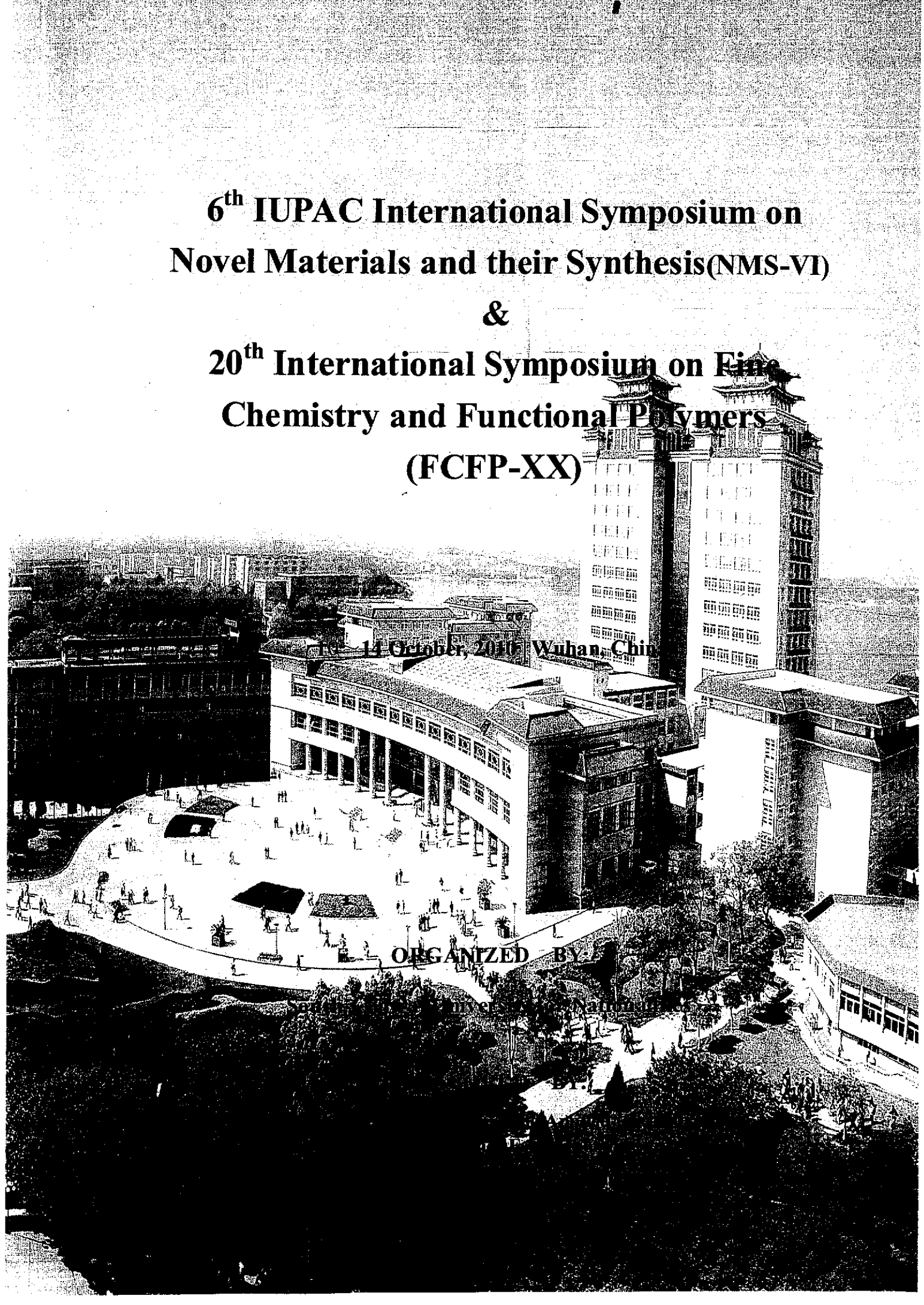
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## STUDY OF PTRU/CNF FOR OXIDATION OF ETHANOL IN PBI-BASED HT-PEMFC

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The high-temperature proton-exchange membrane fuel cells (HTPEMFCs), which can operate between 120 and 180°C, suggest many applications since as a small to medium scale emergency power supply unit and an alternative power source for small scale applications until combined heat and power (CHP) systems for residential and small commercial, militaries and vehicles applications. Direct ethanol fuel cell (DEFC) has advantageous features such as high power density, low weight, compactness, and suitability for discontinuous operation. [1] However, the relatively complex reaction mechanism in the DEFC makes the subject of many studies [2].

In this work, catalysts based on PtRu (1:1), supported on carbon nanofibers for the electro-oxidation of ethanol were prepared by two different methods, sodium borohydride and alcohol-reduction processes. They were characterized by X-ray diffraction, SEM-EDX, TEM and temperature programmed reduction. Moreover, essays in a H<sub>3</sub>PO<sub>4</sub> doped polybenzimidazole (PBI)-based fuel cell operating at 125–200 °C were carried out to evaluate the performance of the catalysts prepared.

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