Synthesis and Characterization of Pt/NiO/MWCNTs Catalysts

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The nanocomposites of Pt/NiO/MWCNTs were prepared by two-stage process, sol-gel method and polyol method. Multi-walled carbon nanotubes (MWCNTs) are used as supporter in this study for manipulating the catalytic properties of platinum-nickel oxide. Transmission Electron Microscope (TEM), Scanning Electron Microscope (SEM), X-ray Diffraction (XRD) are used analysis the structure and thermal properties of the catalysts.

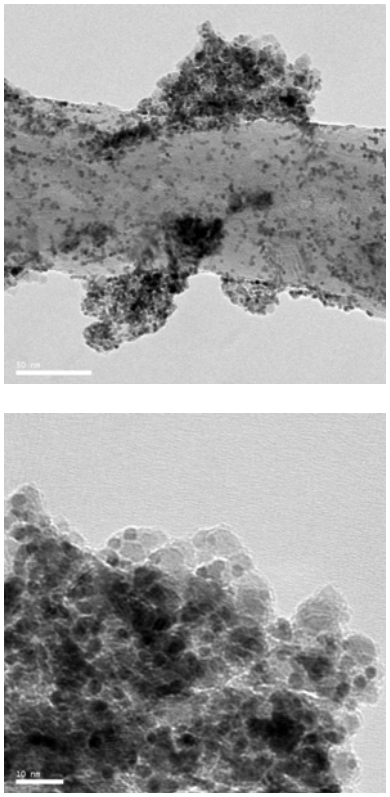

Fig. 1: HRTEM images of synthesized nanocomposites.

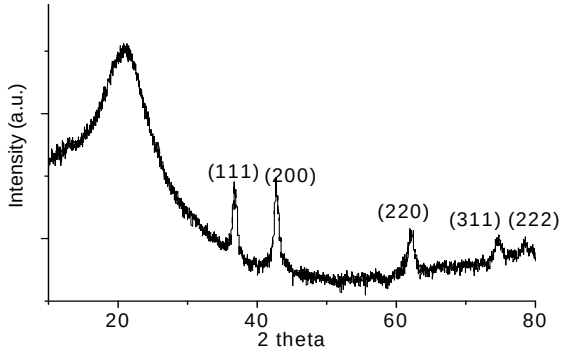

Fig. 2: XRD pattern of synthesized nanocomposite by using NSRRC 17A.

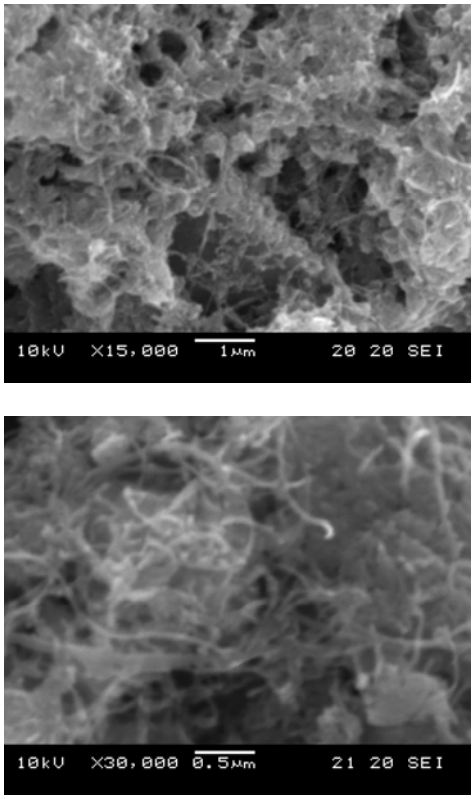

Fig. 3: SEM images of synthesized nanocomposites.

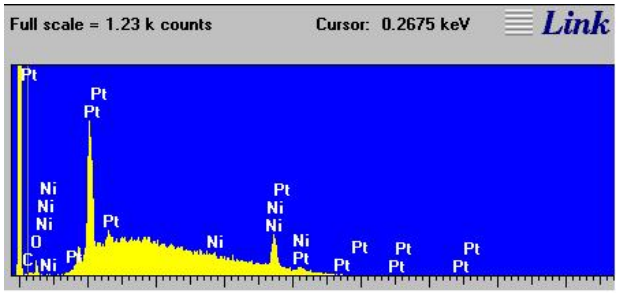

Fig. 4: EDS analysis of synthesized nanocomposite.

Conclusions

[1] By using two-stage process (sol-gel and polyol methods), the Pt/NiO/MWCNTs catalysts are successfully synthesized.

[2] According to the results of XRD in NSSRC 17A and TEM images, the nanocomposites have the composition of NiO, which size is about 20 nm.

Acknowledgements

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