

Preparation of nickel nanoparticle by Water-in-oil microemulsion method and application for upgrading heavy oil

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Water-in-oil microemulsion synthetic method is an effective way to prepare monodisperse metallic nanoparticles under a relatively mild condition. Upgrading process is a process that upgrades bitumen(heavy oil) into synthetic crude oil(light oil). As the world's supply of light crude oil is depleted, the stocks of heavy oil become more and more important. Accordingly, a research on upgrading process and catalyst have been highly increased along with greater demand of the heavy oil. In this study, we synthesized the nickel nanoparticles with different particle sizes by water-in-oil microemulsion synthetic method and estimated a feasibility of a dispersal catalyst for upgrading heavy oil.