

New Reforming process of Pyrolysis Fuel Oil based Pitch by UV Irradiation

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In this study, Pyrolysis fuel oil (PFO) was reformed by heat and UV irradiation for using as a precursor of carbon fiber. The prepared pitches were characterized by elemental analysis, softening point, and aromaticity. The as-received PFO was reformed at 250 oC for 2 hour using magnetic stirrer under UV lamp. The added 2,2-dimethoxy-2-phenylacetophenone (DMPA) as an UV initiator was fixed 1 wt.%, but dipentaerythritol hexaacrylate (DPHA) as a cross-linker was added 3, 5, and 10 wt.% in PFO basis. The hydrogen content of the reforming pitches decreased slightly with reforming using UV radiation and addition of cross-linker. The softening point of prepared pitch was increased as the increase of cross-linker concentration. Reformed pitch under UV irradiation was composed more aromatic carbon compounds than reformed pitch without UV irradiation. According to these results, UV radiation might be effective to prepare pitch witch had more aromatic compounds and higher softening point.