

### Preparation of the superfine carbon fiber by melt electrospinning of pitch

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The electrospinning method is effective tool for preparing superfine fiber from pitch. It is effective for pitch that has low softening point by the solvent electrospinning method but not applicable for pitch that has high softening point or mesophase pitch owing to low solubility with any organic solvent. In this research, N<sub>2</sub> blown naphtha cracking bottom oil based isotropic pitch that has high softening point(290°C) and petroleum based mesophase pitch(360°C) from ENEOS were melt electrospun. The interference of high voltage between heater for pitch melting reactor and controller of heater was shielded with high voltage transformer and IR temperature transducer was used for measurement of temperature and input of controller. The very fine web type pitch fibers that have several micrometer in diameter were obtained and superfine pitch fiber less than 1 $\mu$ m in diameter were also found. If the condition optimized, it is possible to prepare pitch fiber that have nano sized diameter uniformly. The required voltage is ranged into 30~60kV, relatively higher than the voltage that need in solvent electrospinning. The superfine pitch based carbon fiber was obtained by thermal stabilization and typical carbonization of pitch fiber web.