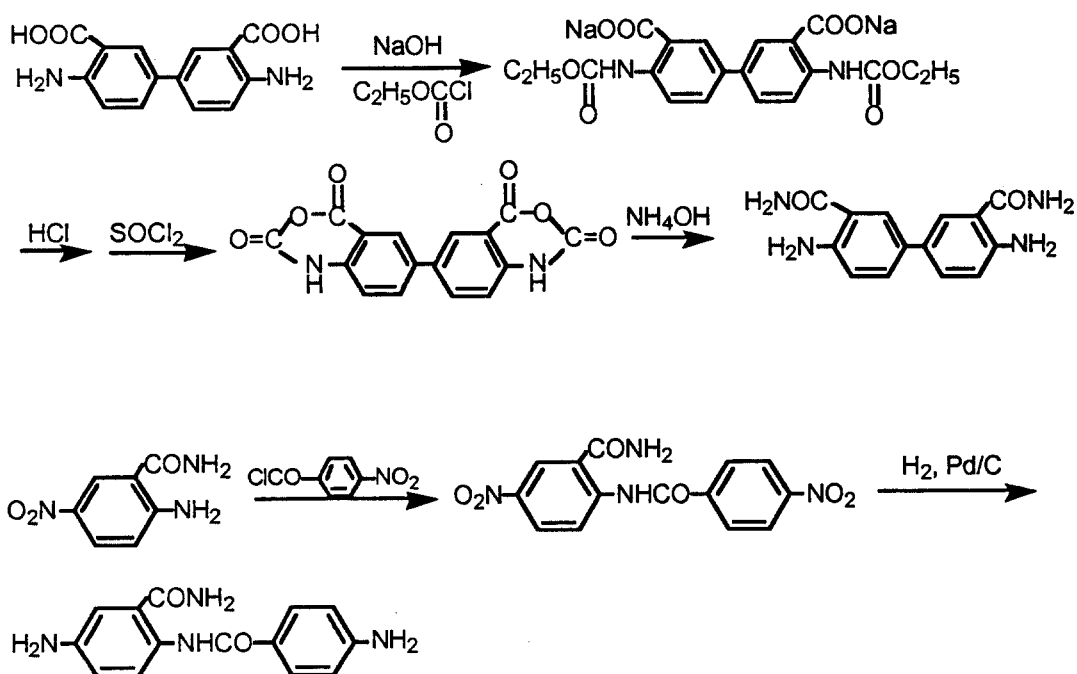


Synthesis and Characterization of Polyimides Having Pendant Carbamoyl Group

강석주, 하완식*

생산기술연구원, *서울대학교 공과대학 섬유고분자공학과

Aromatic poly(amic acid)s having carbamoyl group at ortho position were prepared by solution polymerization of various dianhydrides with aromatic diamines of 3,3'-dicarbamoyl benzidine and 4,4'-diamino-6-carbamoyl benzanilide.



The resultant poly(amic acid)s could be cast into transparent and tough films and be changed to polyimides by subsequent thermal treatment. The change of chemical structure along the polymer chain during the thermal treatment was investigated by FTIR spectroscopy. Formation of ring structure of imide having isoindoloquinazolone and benzoquinazolone units during the thermal treatment was monitored by change of absorption band at $1360\text{-}1380\text{ cm}^{-1}$ due to characteristic absorption of C-N stretching of imide. The characteristic absorption bands of polyimide were examined by the corresponding model compound. Thermal, mechanical and solution properties will be discussed.