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Author YEN-CHENG LAI
Author's Email Address No Public.
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Abstract
The first part of this research is to prepare carbon nanomaterial containing nitrogen by sintering processes. The chemical oxidization method is used to prepare conductive polyaniline doped with HCl. The sintering temperature are set at 600, 700, 800, 900, and 1000℃, respectively. The thermal stability, conductivity, specific surface area, and degree of graphitization are increased with the sintering temperature are increased. The result of FT-IR reveals that the carbon nanomaterials containing nitrogen are linear structure and network structure at 600℃and 1000℃, respectively. Results of HR FE-SEM show that the morphology of carbon nanomaterials containing nitrogen is fiber with the diameter ranging from 50nm to 100nm.
The second part of this research is to prepare polyaniline (PANI) by adding various polyvinylpyrrolidone (PVP) contents (0wt%, 0.1 wt%, 0.3wt%, 0.5wt%th, 1.0wt%, and 2.0wt%). Results of TEM and SEM show that the morphology of PANI is fiber when adding 0.1wt% PVP. However, if the amount of PVP is more than 0.3wt%, the morphology of PANI is spherical particle. PANI conductivity is decreased with the amount of PVP increased. Since PVP is non-conductive polymers, the conductivity of PANI is decreased.
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