

Sarawut Sangngern 2010: Modification of Poly(vinyl alcohol) by Simple Organic Reactions for Using as Electronic Nose Materials. Master of Engineering (Materials Engineering), Major Field: Materials Engineering, Department of Materials Engineering. Thesis Advisor: Assistant Professor Apirat Laobuthee, Ph.D. 66 pages.

Modification of poly(vinyl alcohol) by esterification is one of alternative ways to prepare copolymers. The degree of esterification on PVA was determined by FTIR, ¹H-NMR, and elemental analysis. The chemical vapour sensors were fabricated by mixing polymer and carbon black in DMSO afterwards prepared as thin films onto the interdigitated electrodes (IDE) by spin-coating technique. To investigate the chemical vapour sensing property, the chemical sensors were examined with various organic solvents such as hexane, toluene, alcohols, THF, ethyl acetate, etc. The experimental results indicated that the composites have various responses to various solvent vapours.

Keywords: PVA modification, chemical vapour sensor, carbon black composite

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Thesis Advisor's signature

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