

Electrospun of Epoxidized Natural Rubber (ENR) with Poly vinyl alcohol (PVA) ENR-PVA composite membrane for PEMFC applications

The aim of this study is to electro spun epoxidized natural rubber / poly (vinyl alcohol) (ENR/PVA) blend with composites membranes which were prepared by electrospinning technique for PEMFC Applications. Various concentrations of epoxidized natural rubber (ENR) solution in N,N-dimethylformamide (DMF) and tetrahydrofuran (THF) were directly added to PVA solution for plasticization of the electro spun nanofibrous. Then study the properties of the membrane, Chemical properties, Morphology, Dynamic-Mechanical Thermal Analysis (DMTA), Electrical properties, Water uptake, Ion exchange capacity (IEC) and proton conductivity of various membranes were determined. From the scanning electron microscopy (SEM) were used to characterize the pristine and plasticized nanofibrous. DMTA results indicated that the addition of PVA resulted in the shifting of glass transition temperature (T_g) towards lower temperatures. Water uptake Electrical properties Ion exchange capacity (IEC) and proton conductivity lower When the approximately of PVA increase.

Primary author: Mr CHINNASA, Pornchai (Program of Physics Rajabhat Mahasarakham University)

Co-authors: Prof. SWATSITANG, Ekaphan (Department in Physics Khon Kaen University); Ms SARASEE, Piya-porn (Rajabhat Mahasarakham University); Mr PONHAN, Wichaid (Program of Physics Rajabhat Mahasarakham University); Ms PHOEMPHUN, Yuwadee (Rajabhat Mahasarakham University)

Presenters: Ms SARASEE, Piyaporn (Rajabhat Mahasarakham University); Ms PHOEMPHUN, Yuwadee (Rajabhat Mahasarakham University)

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