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N.J. Steffy, V. Parthiban, A.K. Sahu

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N. J. Steffy[1,2,3], V. Parthiban[3,4], A.K.Sahu[1,3,4*]

[1]Academy of Scientific and Innovative Research (AcSIR), CSIR-Structural Engineering Research Centre Campus, Taramani, Chennai, India - 600113

[2]CSIR-Structural Engineering Research Centre, Taramani, Chennai, India- 600113

[3]CSIR-Central Electrochemical Research Institute Madras Unit, CSIR Madras Complex, Taramani, Chennai, India- 600113

[4]Academy of Scientific and Innovative Research (AcSIR), CSIR-Central Electrochemical Research Institute Campus, Karaikudi, India- 630003

[*]**Corresponding Author.** Tel.: +91-44-22544554; fax: +91-44-22544556. E-mail: aksahu@cecri.res.in

Abstract

Sulfonic acid functionalized multiwalled carbon nanotube (sMWCNT) is explored as a potential inorganic filler as well as a solid acid proton conducting medium to realize a hybrid membrane with Nafion for a polymer electrolyte membrane fuel cell (PEMFC) for low humidity applications. The simple, but effective, functionalization of MWCNT is performed by sulfonic acid containing aryl radicals to increase the number of sulfonate groups per unit volume of MWCNT domain. The hybrid membrane made from such fillers has a positive