Title: **Modelling of proton conducting ternary system polymer electrolyte membranes with MATLAB**

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A Fuel Cell component modelling is very important for fuel cell developers because it can lead to design improvements, as well as cheaper, better, and more efficient fuel cell components and operating conditions. Modelling of the electrolyte membranes can shed a lot of light on the various phenomenons responsible for proton conduction and can help in designing better membranes. In the present work, ionic conduction behaviour in ternary system proton conducting non-aqueous polymer electrolytes has been modelled using MATLAB. Simulation programs describing the relation to the electrical properties with parameters such as viscosity, polymer electrolyte chain length and flexibility, mobility of ions, temperature and glass transition temperature of the membrane has been modelled. The simulated results are compared with the experimental results and discussed.