

POLYMER MEMBRANE PREPARED BY PECVD.

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The growing interest for clean energy production strongly relaunched fuel cells applications. In particular, for the market of the portable electronics of the significant developments are in hand in order to miniaturize the fuel cells and thus to propose an alternative to the classically used accumulators and batteries. In this field, new materials and associated processes of development are necessary. The recent efforts of search authorized in the field of the miniature fuel cells to membrane polymeric electrolyte (PEMFC) in particular stick to develop a new generation of protonic conducting membrane worked out by techniques derived from the microelectronics. While following this new orientation, thin carbon fluorine based membranes containing sulfonic acid group were prepared by plasma enhanced chemical vapour deposition of trifluoromethanesulfonic acid and octafluorocyclobutane. The plasma formed polymer structure was characterized by means of X-ray photoelectron spectroscopy and Fourier transform infrared spectroscopy. Influence of process parameters such as applied plasma power, monomer flow rate and pressure on sulfonic acid preservation is discussed.