

## **Etching Behavior of Poly(vinylidene fluoride) Thin Films Irradiated with Ion Beams - Effect of Irradiated Ions and Pretreatment**

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Poly (vinylidene fluoride) thin films irradiated with four kinds of ion beams were exposed to a 9 M KOH aqueous solution after their storage in air for 30 or 90 days at different temperatures. According to the conductometry, the heating at 120 degrees C was found to enhance the etch rate in the latent track without changing that in the bulk, thereby enabling us to obtain very high etching sensitivity for the preparation of nano-sized through-pores. The formation of hydroperoxides during this pretreatment should facilitate the introduction of the etching agent to improve etchability. Additionally, the irradiation of higher-LET ions, causing each track to contain more activated sites (like radicals), was preferable to achieve high sensitivity of the etching.