OP-3-49

Wednsday, May 11, 2011, 05:20-05:40 pm
Room: Ambassadeurs

DIELECTRIC BEHAVIOR OF POLYMER NANOCOMPOSITES BASED ON POLY(VINYLIDENE DIFLUORIDE)

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Novel nanocomposites based on poly(vinylidene difluoride) (PVDF) and modified porous clay were prepared. Bentonite clay was used as starting clay and synthesized as a porous clay heterosturcture (PCH). In addition, the PCH was modified by introduced barium ions into the PCH before blended with PVDF via melt method and then fabricated as a thin film nanocomposite. The optimal ratio between barium ions and PCH was studied and the successful inducement of barium ions into the PCH was confirmed by X-ray fluorescence spectroscopy technique. Moreover, the optimal ratio between modified clay and PVDF was evaluated. Finally, the dielectric behavior of the PVDF-modified clay nanocomposite were investigated and measured as functions of temperature and frequency by using impedance/gain phase analyzer. The results showed that the dielectric constant of the nanocomposite was increased with the amount of modified clay at all frequency and also higher than pure PVDF film.