

Abstract

In order to optimize the use of some materials in electronic and microelectronic fields, the study of some of their properties is very important. Among these materials, we cite poly (ethylene naphtalate), PEN, which the description with a three-phase model is necessary to explain some of its dielectric behaviors, such as, for example, the α relaxation peak. A thermal treatment by quenching the material in ice water at different temperatures has allowed us to obtain various partially crystalline poly ethylene naphtalate. DSC measurements have been carried out from 40° to 290°C in order to characterize the glass transition, melting point, and crystallinity of the obtained semicrystalline PEN. The results show the presence of a crystalline phase and a part of the amorphous phase that does not participate in glass transition, called the rigid amorphous phase. This later is more important in PEN than the one present in PET