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Yellow Beryl was obtained from Teófilolo Othoni, state of Minas Gerais, and added into a matrix of Polipropileno (PP) made by Braskem. Here we have investigated the property of optical absorption (OA) of this composite submitted to various doses of gamma-radiation. We have almost no works on this type of composite (polymers/beryl) so far. The property of OA of the composite has been measured in the NIR (Near Infrared) range before and after irradiation. Have been used five different doses of gamma-radiation (1, 3, 5, 7 and 10 kGy) and different rates of fraction of beryl (1%, 10%, 30%, 50%) with purpose to detect any possible change on its spectra. The optical spectra of the composite before and after irradiation were compared with that of PP and yellow Beryl also before and after irradiation. Beryl has shown bands at 7143 cm-1 and a large band from 5556 cm-1 to 5000 cm-1 which are associated with O-H groups from to trapped water. Polypropylene has exhibited bands at 8333 cm-1 and at 7143 cm-1 which is linked with the existence of O-H molecules; at 5882 cm-1 which is due to hydrocarbon groups and finally at 5556 cm-1 and from 5263 cm-1 to 5000 cm-1 that are associated with O-H molecules [1]. The material obtained by mixing PP and Beryl gave us a spectra that shows bands at the same positions of the spectra of PP and Beryl separately. After irradiation is possible to see changes in the composite optical absorption measure when we confronted them against the ones from PP and Beryl isolately.

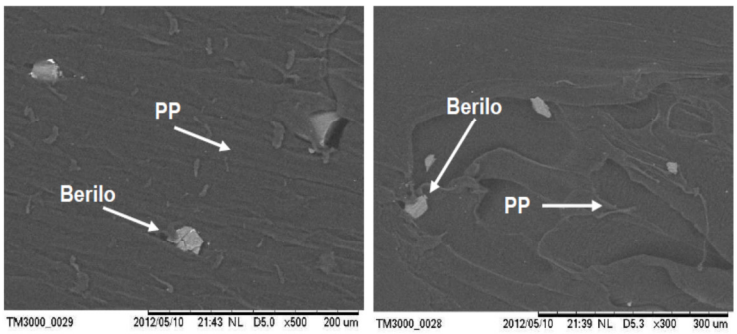

Fig1. Micrograph of PP/Beryl Composite [2] – (a) zommed at 500x and (b) zoomed at 300x

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[2] Estudo das propriedades de absorção óptica do compósito pp/berilo sob efeito da radiação gama (γ), Mauá, SP, 2012.