

Identifikasi masker termoplastik pada bagian yang terkena dan tidak terkena radiasi = Identification of thermoplastic mask on radiated and non radiated parts

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Abstrak

Masker fiksasi dipakai pada radioterapi sebagai salah satu alat bantu agar pasien tidak bergerak selama proses radioterapi. Pada penelitian ini, bahan masker fiksasi bekas pasien radioterapi dianalisa untuk diketahui jenis polimer penyusunnya. Dengan melakukan serangkaian pengujian yakni pengukuran massa jenis, X-Ray Diffraction (XRD), Differential Scanning Calorimetry (DSC), Fourier Transform Infrared Spectroscopy (FTIR), Energy Dispersive X-Ray Spectrometry (EDAX) diketahui bahwa bahan masker fiksasi adalah polimer termoplastik Polycaprolactone. Selain itu dari hasil pengujian diketahui bahwa pemakaian terus-menerus pada masker fiksasi tidak begitu mempengaruhi sifat fisik material ini. Walaupun demikian pada pengujian FTIR menunjukkan jika pada bagian bahan yang mendapat radiasi secara terus menerus akan membuat gugus -CH_3 menghilang dan membentuk gugus =CH_2 .

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Immobilization devices have been used in radiotherapy as a support system for patients so that the patients stay in the same spot during radiotherapy. In this research, a used thermoplastic mask was identified to obtain the type of polymer. This thermoplastic mask was identified using density measurement, X-Ray Diffraction (XRD), Differential Scanning Calorimetry (DSC), Fourier Transform Infrared Spectroscopy (FTIR), Energy Dispersive X-Ray Spectrometry (EDAX) and Hardness Test. The results indicated that the immobilization devices was made from Polycaprolactone (PCL). It was also found that before and after several times of radiotherapy, the physical properties of this device remained the same. However, FTIR results showed that a function group -CH_3 disappear and a function group =CH_2 was formed.