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## Effect of gamma irradiation on the structural and color properties of CR 6-2 polycarbonate

**M M Abutalib**

King Abdulaziz University, Saudi Arabia

Samples from sheets of CR 6-2 polymeric materials have been exposed to gamma rays in the dose range 20-400 KGy. The modifications induced in CR 6-2 samples due to gamma irradiation have been studied through different characterization techniques such as X-ray diffraction XRD, intrinsic viscosity, refractive index and color difference studies. The results indicated that the crosslinking is the dominant mechanism at the dose ranges 150-400 KGy. This crosslinking destroyed the degree of ordering in the CR 6-2 samples associated with an increase in intrinsic viscosity values. This indicates an increase in the average molecular mass. Additionally, the non irradiated CR 6-2 sample showed significant color sensitivity towards gamma irradiation. The sensitivity in color change towards gamma irradiation appeared in the change in the blue color component of the non irradiated CR 6-2 film to yellow after exposure to gamma up to 400 KGy. This is accompanied by a net increase in the darkness of the samples.

### Biography

M M Abutalib Associate Professor has completed her PhD from King Abulaziz University and Post-doctoral studies from King Abdulaziz University School of Physics. She is the Director of Material Science and Radiation. She has published more than 20 papers in reputed journals..

[mabutalib@kau.edu.sa](mailto:mabutalib@kau.edu.sa)**Notes:**