

EFFECT OF UV AND γ -IRRADIATION
ON THE STRUCTURE AND OPTICAL
PROPERTIES OF *a*-C:H:N FILMS

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S u m m a r y

The influence of ultraviolet and γ -irradiation on the properties of diamond-like carbon films with various nitrogen contents has been studied. Irradiation with ultraviolet light leads to a significant increase in the optical band gap owing to structural changes in carbon, hydrogen, and nitrogen bonds, as well as to the partial diffusion of oxygen, which is activated during the exposure, from air into the film. A reduction of the optical bandgap after γ -irradiation was observed; however, films with higher nitrogen contents demonstrate a higher resistance to radiation. Nitrogen bonds were found to experience more structural changes, whereas carbon bonds to be slightly reconstructed.