

## Energy-absorption buildup factors and specific absorbed fractions of energy for bioactive glasses

### ABSTRACT

In the present work, effective atomic numbers  $Z_{\text{eff}}$ , energy-absorption buildup factors EABF and specific absorbed fractions of energy ( $\Phi$ ) for different bioactive glasses have been calculated in the present work. Geometric-Progression (G-P) fitting method was used for computation of EABF. The computed EABF is used to estimate the values of  $\Phi$ . It is shown that the EABF and  $\Phi$  are dependent on  $Z_{\text{eff}}$  and mean free path. In addition, EABF and  $\Phi$  were the largest for S4 and S7. The results in this work could be useful in choosing a suitable type of these glasses which in turn are able to resist possible radiation damages at human body and to determine the thickness and shape of the bioactive glasses needed.

**Keyword:** Bioactive glasses; Effective atomic number; Absorption; Ionizing radiations