

## Analysis of electron-induced fullerite C<sub>60</sub> modification in terms of destruction cross-section

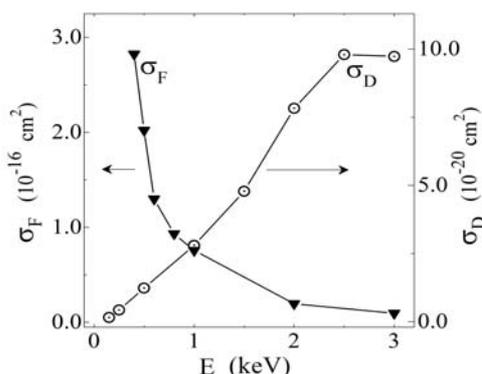
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Despite the noticeable number of the works investigating electron beam induced destruction of individual fullerenes C<sub>60</sub> [1] and respective modification of solid fullerite C<sub>60</sub> [2,3], some important aspects of this process is still weakly studied. In particular, a widely accepted model considering e-induced destruction of solid fullerite as a successive fragmentation of non-interacting fullerenes [2], has, in our opinion, insufficiently reliable experimental verification and incorrectly interprets basic mechanisms of this process.

The aim of present work was to check the validity of above mentioned model by comparison of a well-established energy dependence of cross-section  $\sigma_F(E)$  [1] describing e-induced fragmentation of individual fullerenes C<sub>60</sub> with respective dependence of effective cross-section  $\sigma_D(E)$  specifying destruction of solid fullerite C<sub>60</sub>. The last cross-section was obtained in this work on the basis of the electron energy loss spectroscopy (EELS) and special processing technique using some peculiarities of fullerite EEL spectra and suggested in our early work [3]. Both cross-



Experimental cross-sections of e-induced fragmentation of separate fullerenes C<sub>60</sub> ( $\sigma_F$ ), taken from [1] and of e-induced destruction of solid fullerite C<sub>60</sub> ( $\sigma_D$ ), obtained in this work.

assembly of fullerenes and than it was expected earlier.

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