

CALCULATION OF CONCENTRATION  
PROFILES OBTAINED AT THIN FILM  
DEPOSITION USING LOW-ENERGY ION BEAMS

*V.I. Keeprich, G.V. Kornich, A.I. Bazhin<sup>1</sup>*

Zaporizhzhya National Technical University  
(64, Zhukovskiyi Str., Zaporizhzhya 69063, Ukraine;  
e-mail: [keeprich@zntu.edu.ua](mailto:keeprich@zntu.edu.ua)),

<sup>1</sup>Donetsk National University  
(24, Universytets'ka Str., Donetsk 83055, Ukraine)

S u m m a r y

In the framework of the diffusion approximation, a mathematical model of thin film deposition which takes into account mass transport under the action of an ion beam has been developed. The bulk profiles of component concentrations at the Ni-film deposition onto a copper substrate have been calculated for ion energies of 100, 200, and 400 eV and an ion flux of  $10^{15}$ ,  $10^{16}$ , and  $10^{17}$   $\text{cm}^{-2}\text{s}^{-1}$ . The model parameters of the deposition process have been estimated using the SUSPRE and SRIM programs, and the corresponding profiles of component concentrations have been compared.