

D. Yu. SADOVYJ

Homogenization of Quasilinear Parabolic Problems in a Thick Two-Level Junction

National Taras Shevchenko University of Kyiv, Ukraine

E-mail: sadovyj@univ.kiev.ua

We consider a parabolic quasilinear problem in a thick three-dimensional two-level junction Ω_ε which consists of a cylinder and ε -periodically strung thin disks from two different classes depending on their geometric structure and boundary conditions. In addition, the thin disks from different classes are ε -periodically alternated along the lateral surface of the cylinder.

We study the influence of nonlinear boundary conditions given on the boundaries of the thin disks on the asymptotic behavior of the solution as $\varepsilon \rightarrow 0$, i.e., when the number of the thin disks infinitely increases, whereas their thickness tends to zero. The results are obtained jointly with T.A. Mel'nyk.