



Electrical engineering. A.A. Scherba, O.L. Rezinkin, M.M. Rezinkina. **Electrophysical processes in dielectric and magnetic media.** -/ К.: Naukova dumka. – 2016. – 192 p. -200 copies. ISBN 978-966-00-1482-4

The monograph describes the methods of mathematical and physical modeling of electrophysical processes arising in dielectric, conducting and magnetic media under the influence of electromagnetic fields. Moreover, depending on the parameters of the applied electromagnetic influence, the considered media can have both linear and nonlinear electromagnetic properties. The calculations of electromagnetic fields in inhomogeneous media, which have a complex spatial structure, are executed in terms of vector magnetic, as well as scalar electric and magnetic potentials.

The advanced methods of synthesis of dielectric media with nonlinear properties, as well as the methods for determining their electromagnetic parameters are described. A description of the samples of high-voltage pulse generators developed by means of mathematical and physical modeling is given.

The monograph is intended for the specialists in the field of mathematical and physical modeling of electromagnetic processes in relation to the tasks of electrical engineering and electrical power engineering, as well as postgraduate students and students of the corresponding specialties.