

**A DESIGN TOOL FOR NEAR-FIELD RADIATIVE TRANSFER:
THE DEVELOPMENTAL STEPS OF THE *NF-RT-FDTD* CODE**

Azadeh Didari¹ and M. Pinar Mengüç²

Center for Energy, Environment and Economy (CEEE) and Faculty of Engineering,
Özyeğin University, Istanbul, 34794 Turkey

ABSTRACT. In this work, we report the details of *NF-RT-FDTD* computational algorithm to be used as a design tool for near-field radiative transfer calculations needed for energy harvesting, nano-scale manufacturing and radiative cooling applications. We review the fundamental relations for far- and near-field radiative transfer between different geometries with nano-scale features and gaps. We discuss the formulation and the boundary conditions and outline its future expansions to complex geometries.