

Notice of dissertation defense

04.08.2017

Metamaterials for 21st-Century Applications

Title	Wire Media for Enhancement of Radiative Heat Transfer and Spontaneous Emission
Content	<p>Electromagnetic metamaterials are artificial media which exhibit extraordinary electromagnetic features and functionalities that are not found in nature. One of the important realizations of metamaterials is called wire medium which is an optically dense array of aligned wires embedded into a dielectric matrix.</p> <p>This thesis concentrates on wire medium and its use for two specific and important purposes. The first purpose is associated with radiative heat transfer, and it is the improvement of thermophotovoltaic systems (generally speaking, systems for conversion of radiative heat into electricity). The second purpose is the enhancement of radiation from subwavelength emitters.</p> <p>Using wire metamaterials, the thesis paves the road towards creation of more efficient thermophotovoltaic generators than those known now, and in addition, its results can be also useful for infrared optical sensing, for radiative cooling of small radiation sources, and, generally, for the whole area of nanophotonics.</p>
Field of research	Radio Engineering
Doctoral candidate	Mohammad Sajjad Mirmoosa, MSc. (Tech.) Born in Iran, 1987
Date and time	04.08.2017 at 12:00
Place	Aalto University, School of Electrical Engineering, hall AS1, TUAS Building, Maarintie 8, Espoo
Opponent	Professor Zubin Jacob, Purdue University, USA
Supervisor	Professor Constantin Simovski, Aalto University, School of Electrical Engineering, Department of Electronics and Nanoengineering
Dissertation website	(https://aaltodoc.aalto.fi/handle/123456789/53)
Contact information	Mohammad Sajjad Mirmoosa, +358503641795, mohammad.mirmoosa@aalto.fi P.O. Box 15500, FI-00076 Aalto, Finland

The dissertation is publicly available on the notice board of the Library of the Aalto University School of Electrical Engineering (Maarintie 8).