

# Emine Pınar Karabulut

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## CONTACT INFORMATION

Department of Electrical and Electronics Engineering  
Bahçeşehir University  
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## RESEARCH INTERESTS

Computational electromagnetics and optics, theoretical and numerical methods for electromagnetics and optics, plasmonics, nanophotonics, nanotechnology, photonic band-gap structures, left-handed materials, metamaterials, metal-dielectric nanocomposites, optimization and information theory, detection and estimation theory.

## PROFESSIONAL AND RESEARCH EXPERIENCE

- ◇ **Assist. Prof. Dr., September 2012-present**  
Bahçeşehir University, Electrical and Electronics Engineering
- ◇ **Researcher, March-July 2012**  
MITOS Medikal Tekn. San. ve Tic. A.Ş.
- ◇ **Graduate Research Assistant, 2004-2011**  
Koç University, Electrical and Electronics Engineering

## EDUCATION

- Koç University**, İstanbul, Turkey
- ◇ **Ph.D. in Electrical and Electronics Engineering, 2006-2012**  
Thesis: *Optical Characterization of 2D Metals and Dielectric Nano-structures via MoM-based Numerical Technique, and Development of DCIM with Spatial Error Criterion and Automatic Order Selection*
  - ◇ **M.S. in Electrical and Computer Engineering, 2004-2006**  
Thesis: *Study of Planar Stratified Structures and Their Novel Applications: Chirped Mirrors and Photonic Crystals*
- Middle East Technical University**, Ankara, Turkey
- ◇ **B.S. in Electrical and Electronics Engineering, 1999-2004**

## JOURNAL PUBLICATIONS

- E. P. Karabulut**, and M. I. Aksun, “An efficient MoM-based algorithm for the analysis of two-dimensional dielectric and metallic structures,” *Microwave Theory and Techniques, IEEE Transactions on*, (to be submitted).
- E. P. Karabulut**, V. B. Erturk, S. Adanir, L. Alatan and M. I. Aksun, “A Novel Approach for the Fast Evaluation of 1D and 2D Summations,” *Microwave Theory and Techniques, IEEE Transactions on*, (to be submitted).
- Birol Aslanyurek, Tolga Ulas Gurbuz, **E. P. Karabulut** and Ibrahim Akduman, “An Efficient Nonlinear Imaging Approach for Dielectric Objects Buried Under a Rough Surface,” *Geoscience and Remote Sensing, IEEE Transactions on*, (submitted).
- E. P. Karabulut**, A. T. Erdogan, and M. I. Aksun, “Discrete complex image method with automatic order selection,” *Microwave Theory and Techniques, IEEE Transactions on*, vol. 59, no. 10, p. 2385-2393, Oct. 2011. doi:10.1109/TMTT.2011.2163804
- E. P. Karabulut**, A. T. Erdogan, and M. I. Aksun, “Discrete complex image method with spatial error criterion,” *Microwave Theory and Techniques, IEEE Transactions on*, vol. 59, no. 4, pp. 793-802, Apr. 2011. doi:10.1109/TMTT.2011.2105275
- E. P. Karabulut** and M. I. Aksun, “Characterization of finite photonic crystals with defects,” *Quantum Electronics, IEEE Journal of*, vol. 47, no. 3, pp. 406-413, Mar. 2011. doi:10.1109/JQE.2010.2091394

M. I. Aksun, A. Alparslan, **E. P. Karabulut**, E. Irci, and V. B. Erturk, "Determining the effective constitutive parameters of finite periodic structures: Photonic crystals and metamaterials," *Microwave Theory and Techniques, IEEE Transactions on*, vol. 56, no. 6, pp. 1423-1434, Jun. 2008 doi:10.1109/TMTT.2008.923870

#### CONFERENCES

**E. P. Karabulut**, V. B. Erturk, S. Adanir, L. Alatan and M. I. Aksun, "A Novel Approach for the Fast Evaluation of 1D and 2D Summations," The XXX General Assembly and Scientific Symposium of the International Union of Radio Science (Union Radio Scientifique Internationale-URSI), Istanbul, Turkey, 13-20 Aug. 2011.

**E. P. Karabulut**, A. T. Erdogan, and M. I. Aksun, "Discrete complex image method with spatial error criterion and automatic order selection," Antennas and Propagation (APSURSI), 2011 IEEE International Symposium, Spokane, WA, USA, pp. 1577-1580, 3-8 Jul. 2011.

**E. P. Karabulut**, A. T. Erdogan, and M. I. Aksun, "Spatial error criterion for discrete complex image method," Antennas and Propagation (EUCAP), Proceedings of the 5th European Conference, Rome, Italy, pp. 2454-2458, 11-15 Apr. 2011.

M. I. Aksun, **E. P. Karabulut** and A. T. Erdogan, "Discrete complex image method with spatial error criterion," INTELECT'2010 IV LEMA-EPFL Workshop on Integral Techniques for Electromagnetics, Les Diablerets, Switzerland, 1 Oct. 2010.

M. I. Aksun, A. Alparslan, **E. P. Karabulut** and A. T. Erdogan, "Discrete complex image method and Greens functions Current Advances," V. URSI TURKEY'2010 Scientific Congress - National General Assembly Meeting, Cyprus, 25-27 Aug. 2010.

**E. P. Karabulut** and M. I. Aksun, "An efficient and accurate MoM-based method for the analysis of two dimensional dielectric structures," INTELECT'2009 III LEMA-EPFL Workshop on Integral Techniques for Electromagnetics, Istanbul, Turkey, 7 Sept. 2009.

**E. P. Karabulut** and M. I. Aksun, "An efficient and accurate MoM-based method for the analysis of two dimensional dielectric structures," PIERS 2009 in Moscow, Russia, 18-21 Aug. 2009.

**E. P. Karabulut** and M. I. Aksun, "MoM-based approach for the efficient and accurate analysis of two-dimensional dielectric Structures," 5th Workshop on the Numerical Methods for Optical Nano Structures ETH Zurich, Switzerland, 6-7 Jul. 2009.

**E. P. Karabulut**, M. I. Aksun, "Characterization of Finite Photonic Crystals," IEEE PhotonicsGlobal@Singapore, Singapore, 8-11 Dec. 2008.

#### AWARDS AND HONORS

- ◇ Received "2012 Serhat Özyar The Young Scientist of the Year" award for her Ph.D. thesis.
- ◇ Received full graduate scholarship from the Scientific and Technological Research Council of Turkey (TÜBİTAK) for Ph.D. study.
- ◇ Received full graduate scholarship from the Scientific and Technological Research Council of Turkey (TÜBİTAK) for M.S. study under the project with contract 105E141.
- ◇ Received full graduate scholarship from Koç University for M.S. study.