

# *Prof. Ioannis T. Rekanos' Curriculum Vitae*

## **1. GENERAL INFORMATION**

### **1.1 Personal Data**

Date of Birth	6 December 1970
Position	Professor
Work Address	Department of Telecommunications, School of Electrical & Computer Engineering, Faculty of Engineering, Aristotle University of Thessaloniki
Telephone / Fax	+302310 995999 / +302310 995928
E-mail	<a href="mailto:rekanos@auth.gr">rekanos@auth.gr</a>
Webpage	<a href="http://users.auth.gr/rekanos">http://users.auth.gr/rekanos</a>
Marital Status	Married, two children
Military Service	1/1999-7/2000 (Hellenic Army, Corps of Research and Informatics)

### **1.2 Degrees**

- Doctoral Degree (PhD), School of Electrical and Computer Engineering (SECE), Aristotle University of Thessaloniki (AUTH), Greece, with highest honours (Feb. 1994 – Dec. 1998).
- Diploma in Electrical Engineering (5-year degree), SECE, AUTH, Greece, with highest honours: 9/10, 2nd out of approximately 200 graduates (Sept. 1998 – July 1993).

### **1.3 Awards**

2000-2002	“Marie Curie Individual Fellowship,” European Commission, for postdoctoral research.
1995-1998	Scholarship of the “Bodossakis' Foundation,” for postgraduate studies.
1995	URSI (International Union of Radio Science) Young Scientist Award, during the URSI 1995, International Symposium on Electromagnetic Theory, St. Petersburg, Russia.
1993	Award of the Technical Chamber of Greece, for academic achievements.
1990-1993	Scholarship of the “Avramidis' Bequest,” for undergraduate studies.
1989-1992	Annual scholarships from the Greek “State Scholarships Foundation”, during undergraduate studies.

### **1.4 Academic Positions**

2015-today	Full Professor, SECE, Faculty of Engineering, AUTH.
2013-2015	Associate Professor, SECE, Faculty of Engineering, AUTH.
2011-2013	Associate Professor, School of Mathematics, Physics, and Computational Sciences (SMPCS), Faculty of Engineering, AUTH.
2006-2011	Assistant Professor, SMPCS, Faculty of Engineering, AUTH.
2006	Associate Professor, Dept. of Informatics & Communications, Technological and Educational Institute (TEI) of Serres, Greece.
2002-2006	Assistant Professor, Dept. of Informatics & Communications, Technological and Educational Institute (TEI) of Serres, Greece.
2000-2002	Postdoctoral Researcher (Marie Curie Fellow), Radio Laboratory, Helsinki University of Technology (now Aalto University), Finland.

## 2. TEACHING

### 2.1 Teaching of Undergraduate Courses

(2006- today) Faculty of Engineering, AUTH

2006-2014	<b>Physics</b> (obligatory, 1st semester, School of Civil Engineering)
2007-today	<b>Acoustics I</b> (elective 6th semester, SECE)
2009-today	<b>Stochastic Signal Processing</b> (obligatory, 4th semester, SECE)
2013-today	<b>Physics I</b> (obligatory, 1st semester, SECE)
2013-today	<b>Linear Systems &amp; Signal Analysis</b> (obligatory, 3rd semester, SECE)
2013-today	<b>Digital Signal Processing</b> (obligatory, 7th semester, SECE)

(2002-2006) Dept. of Informatics and Communications, TEI of Serres

2002-2006	<b>Physics I</b> (obligatory, 1st semester)
2002-2006	<b>Information Theory</b> (obligatory, 2nd semester)
2002-2006	<b>Data Compression</b> (obligatory, 3rd semester)
2002-2006	<b>Computer Networks I</b> (obligatory, 4th semester)
2002-2006	<b>Digital Signal Processing</b> (obligatory, 5th semester)

(1994-1998) Teaching Assistant, SECE, AUTH

1994-1998	<b>Digital Signal Processing</b> (obligatory, 4th semester)
1996-1998	<b>Electromagnetic Field I</b> (obligatory, 3rd semester)
1996-1998	<b>Electromagnetic Field II</b> (obligatory, 4th semester)

### 2.2 Teaching of Postgraduate Courses

2013-today	<b>Mathematical Physics</b> (Doctoral Program, SECE, AUTH).
2013-today	<b>Special Topics of Analytical, Applied, and Computational Electromagnetics and Wave Propagation</b> (Doctoral Program, SECE, AUTH).

### 2.3 Textbooks

2002	<b>Information Theory</b> , TEI of Serres, pages 102. (in Greek)
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### 2.4 Other Teaching Activities

1993-1996	Instructor of the “Hellenic Productivity Center” <b>Computer Architecture Programming (Assembly, Basic, Pascal, C) Operating Systems (DOS, Unix)</b>
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### 2.5 Diploma Theses Supervision

Till today 4 diploma theses have been completed under my supervision in the SECE, AUTH. Another 10 diploma theses have been completed under my supervision in the TEI of Serres.

### 3. RESEARCH ACTIVITY

#### 3.1 Research Topics

##### 2006-today

*SECE - SMPCS, AUTH.*

- Electromagnetic and acoustic wave propagation in nonlinear and dispersive media.
- Permittivity models of dispersive media (Cole-Cole, Davidson-Cole, Havriliak-Negami).
- Fractional calculus.
- Time-domain inverse scattering. Investigation of dispersive scatterers (Debye, Lorentz).
- Computational Electromagnetics. Finite element methods (FEM, Edge Elements) – Finite difference method (FDM) – Finite-difference time-domain methods (FDTD) – Method of moments (MoM).
- Computational wave propagation methods for elastic waves.
- Nondestructive testing using elastic waves.
- Testing of specimens using vibro-ultrasound intermodulation phenomena.
- Antenna design techniques meeting radiation and matching specifications.
- Optimization methods (deterministic and evolutionary algorithms).
- Digital signal processing.

##### 2002-2006

*Dept. of Informatics and Communications, TEI of Serres.*

- Inverse acoustic and electromagnetic scattering in the time domain.
- Advanced computation methods for solving direct and inverse electromagnetic problems. Electromagnetic compatibility and design of microwave devices.
- Digital signal processing of bioacoustic signals.

##### 2000-2002 (Postdoctoral Research)

*Postdoctoral Researcher, Marie Curie Fellow, Radio Lab., Helsinki University of Technology, Finland.*

- Inverse electromagnetic scattering in the time domain using the FDTD method. Simultaneous reconstruction of dielectric and magnetic properties of scatterers from scattered field measurements.
- FDTD methods for acoustic and electromagnetic wave propagation.
- Diffraction. Simulation and analysis of wave propagation in real urban environment (micro-cellular mobile communications). Investigation, evaluation, and presentation of new diffraction coefficients for the estimation of the diffracted field from wedges.
- Digital signal processing of lung and bowel sounds.

##### 1993-1999 (Postgraduate Research)

*PhD Candidate, SECE, AUTH.*

- Inverse electromagnetic scattering in the frequency domain. Microwave imaging using TM and TE illuminations. Multifrequency techniques using frequency hopping
- Computational electromagnetics in wave propagation, scattering, and radiation problems.
- Application of neural networks in electromagnetic problems. Nondestructive testing using Eddy currents.
- Optimization techniques. Deterministic (gradient-based techniques, adjoint state vector techniques) and stochastic (simulated annealing, evolutionary computation, genetic algorithms).
- Digital processing of seismic signals for the detection of primary wave arrivals.

#### 3.2 Doctoral Theses (PhD) Supervision

##### Supervisor

Theseus G. Papadopoulos, **Wave propagation in dispersive media – Inverse scattering.** SMPCS, AUTH (examined in 2012).

### Member of the Advisory Committee

	<b>Name</b>	<b>School</b>	<b>Supervisor</b>	<b>Status</b>
1.	E. Siggiridou	SECE	D. Kugiumtzis, Asc.Prof.	2012 (in progress)
2.	G. Apostolidis	SECE	L. Hadjileontiadis, Prof.	2012 (in progress)
3.	V. Salonikios	SECE	T. Yioultsis, Asc.Prof.	2014 (in progress)
4.	G. Sinatkas	SECE	E. Kriezis, Prof.	2014 (in progress)

### Member of the Examination Committee

	<b>Name</b>	<b>School</b>	<b>Supervisor</b>	<b>Examined</b>
1.	A. Apostoloudia	SMPCS	A. Trochidis, Prof.	2006
2.	C. Charitou	SECE	A. Antonopoulos, Prof.	2007
3.	D. Karatzidis	SECE	T. Tsiboukis, Prof.	2009
4.	G. Theofilogiannakos	SECE	T. Xenos, Prof.	2009
5.	A. Papanas	SMPCS	D. Kugiumtzis, Asc.Prof.	2009
6.	V. Kosmidou	SECE	L. Hadjileontiadis, Prof.	2010
7.	C. Panoulas	SECE	L. Hadjileontiadis, Prof.	2010
8.	S. Taplidou	SECE	L. Hadjileontiadis, Prof.	2010
9.	C. Liondas	SECE	D. Chrissoulidis, Prof.	2010
10.	P. Petrantonakis	SECE	L. Hadjileontiadis, Prof.	2011
11.	I. Ziogos	SECE	E. Kriezis, Prof.	2012
12.	D. Hadjidimitriou	SECE	L. Hadjileontiadis, Prof.	2012
13.	I. Konstantopoulos	SMPCS	E. Aifantis, Prof.	2012
14.	A. Tasolamprou	SECE	E. Kriezis, Prof.	2012
15.	O. Tsilipakos	SECE	E. Kriezis, Prof.	2013
16.	A. Pitilakis	SECE	E. Kriezis, Prof.	2013
17.	N. Karagiannakis	SECE	G. Lazarides, Prof.	2013
18.	V. Zagkanas	SECE	P. Mikropoulos, Asc.Prof.	2014
19.	D. Ketzaki	SECE	T. Yioultsis, Asc.Prof.	2015

### 3.3 Postdoctoral Supervision

Dr. Abbas Semnani, **Time Domain Inverse Scattering**. (Sept. 2008 - Jan. 2009).

### 3.4 Research Projects

#### Coordinator - Principal investigator

- **Development of advanced computational techniques for the solution of direct and inverse electromagnetic problems. Design and investigation of the electromagnetic compatibility of microwave devices.** ARCHIMEDES I, Co-funded by the European Union and the Greek Ministry of Education, TEI of Serres, 2004-2006, 51,585 €.
- **Time-domain inverse scattering using the FDTD method.** Marie Curie Individual Fellowship, European Committee, Helsinki University of Technology, 2000-2002, 130,968 €.

#### Member of the main research group

- **ECEDeMoV: Electromagnetic compatibility of electronic control units and other electronic devices in modern vehicles.** Development of computational techniques for analysis and

**design – Experimental study.** ARCHIMEDES III, Co-funded by the European Union and the Greek Ministry of Education, TEI of Thessaloniki, 2012-2015, Coordinator: Asc. Prof. T. Kosmanis, 75,000 €.

- **Advanced computational intelligence methods for system modeling, classification and remote sensing: Application to the land cover classification problem.** ARCHIMEDES III, Co-funded by the European Union and the Greek Ministry of Education, TEI of Central Macedonia, 2012-2015, Coordinator: Prof. P. Mastorocostas, 84,300 €.
- **Sign2Talk: A translation system of the Greek sign language into voice and vice versa for communications of people with hearing disorders with healthy ones.** Funded by the Greek General Secretariat of Research and Technology, AUTH, 2006-2008, Coordinator: Prof. S. Panas, 675,000 €.
- **Development of intelligent system for modeling biomedical problems. Application to the detection of artery stenosis.** ARCHIMEDES II, Co-funded by the European Union and the Greek Ministry of Education, TEI of Serres, 2005-2006, Coordinator: Prof. P. Mastorocostas, 59,960 €.
- **Development of novel methods for analysis, simulation, optimization, and design of specific microwave filters of the UMTS system in mobile communications.** ARCHIMEDES II, Co-funded by the European Union and the Greek Ministry of Education, TEI of Serres, 2005-2006, Coordinator: Asc. Prof. S. Tsitsos, 50,000 €.
- **Layout analysis of colored documents.** ARCHIMEDES I, Co-funded by the European Union and the Greek Ministry of Education, TEI of Serres, 2004-2006, Coordinator: Prof. C. Strouthopoulos, 52,000 €.
- **Advanced diagnostic processing of breath sounds to detect lung diseases using advanced signal processing techniques.** IKY-DAAD, Univ. Marburg - AUTH, 2000-2003, Coordinator: Prof. L. Hadjileontiadis, 15,000 €.
- **Real-time automatic identification of earthquake epicenters and seismic signal processing.** Funded by the Regional Operational Program - Region of Central Macedonia, AUTH, 1998-1999, Coordinator.: Prof. S. Panas, 200,000,000 GDR = 586,940 €.

#### Colaborator - Researcher

- **In-situ electromagnetic field measurements for telecommunications and industrial applications.** EPET, Funded by the Greek General Secretariat of Research and Technology, AUTH, 1997-1998, Coordinator: Prof. T. Tsiboukis, 5,000,000 GDR = 14,674 €.
- **Development of advanced techniques and specialized software for the electromagnetic analysis of complex biomedical and telecommunication systems.** PENED, Funded by the Greek General Secretariat of Research and Technology, AUTH, 1996-1998, Coordinator: Prof. T. Tsiboukis, 8,000,000 GDR = 23,478 €.
- **Design and construction of a specialized vehicle for electromagnetic measurements.** Funded by the Hellenic Telecommunications Organization, AUTH, 1996-1998, Coordinator: Prof. E. Kriezis, 35,000,000 GDR = 102,715 €.
- **Development of image reconstruction techniques in magnetic resonance tomography. Adaptation to clinical diagnostic needs.** Funded by the Greek General Secretariat of Research and Technology, AUTH, 1994-1995, Coordinator: Prof. E. Kriezis, 5,000,000 GDR = 14,674 €.
- **Study of the distortion of the radiation field due to the inhomogeneities present in the near antenna region.** Funded by the Hellenic Telecommunications Organization, AUTH, 1994, Coordinator: Prof. E. Kriezis.
- **Field analysis and signal processing in magnetic resonance tomography problems.** Funded by the Greek General Secretariat of Research and Technology, AUTH, 1994, Coordinator: Prof. E. Kriezis.

- **Implementation of electromagnetic compatibility research and testing center in the industrial region of the city of Kilkis.** Funded by the Greek Ministry of Labour, AUTH, 1993-1994, Coordinator: Prof. E. Kriezis.

## 4. SCIENTIFIC ACTIVITY

### 4.1 Reviewer of International Journals

- IEEE Transactions on Antennas and Propagation
- IEEE Transactions on Microwave Theory and Techniques
- IEEE Transactions on Geoscience and Remote Sensing
- IEEE Transactions on Biomedical Engineering
- IEEE Transactions on Magnetics
- IEEE Transactions on Neural Networks
- IEEE Transactions on Vehicular Technology
- IEEE Transactions on System Man and Cybernetics, Part A
- IEEE Transactions on Evolutionary Computation
- IEEE Transactions on Instrumentation and Measurements
- IEEE Geoscience and Remote Sensing Letters
- IEEE Antennas and Wireless Propagation Letters
- IEEE Microwave and Wireless Components Letters
- IEEE Signal Processing Letters
- IEEE Journal on Selected Areas in Communications
- IEEE Communications Letters
- Journal of the Optical Society of America Part A
- Journal of Computational Physics
- IET Science, Measurement and Technology
- Photonics and Nanostructures: Fundamentals and Applications
- Radio Science
- International Journal of Imaging Systems and Technology
- Signal Processing
- Medical Physics
- Journal of Sound and Vibration
- Journal of Electromagnetic Waves and Applications
- Mechanical Systems and Signal Processing
- COMPEL
- International Journal of Theoretical Electrotechnics
- Simulation Modelling Practice and Theory
- SPIE Journal of Electronic Imaging
- Numerical Methods for Partial Differential Equations
- Annals of Geophysics
- International Journal of Electronics
- International Journal of Electronics and Communications
- International Journal of Antennas and Propagation
- Medical Engineering and Physics
- Applied Computational Electromagnetics Society Journal
- Progress in Electromagnetic Research Journals
- Applied Mathematics
- Journal of Modern Optics

### 4.2 International Journal Editorial Boards

- ISRN Applied Mathematics, (Editorial Board) 2011-2013
- Medical Physics, (Guest Associate Editor) 2001.

### 4.3 Reviewer in International Conferences

- IEEE Conference on Electromagnetic Field Computation (CEFC)
- IEEE International Geoscience & Remote Sensing Symposium (IGARSS)
- Applied Computational Electromagnetics Society Symposium (ACES)

### 4.4 Session Chairman in International Conferences

- URSI 1998, International Symposium on Electromagnetic Theory, Thessaloniki, Greece, 25-28 May, 1998.
- IEEE CEFC 2008, 13<sup>th</sup> Biennial IEEE Conference on Electromagnetic Field Computation, Athens, Greece, 11-16 May, 2008.
- COMPUMAG 2011, 18<sup>th</sup> Conference on the Computation of Electromagnetic Fields, Sydney, Australia, 12-15 July, 2011.

### 4.5 Committees in International Conferences

- IEEE CEFC 2008, 13<sup>th</sup> Biennial IEEE Conference on Electromagnetic Field Computation, Athens, Greece, 11-16 May, 2008. Member of the editorial committee.
- DSAI 2007, Software Development for Enhancing Accessibility and Fighting Info-exclusion, 8-9 November, 2007. Vila Real, Portugal. Member of the scientific committee.
- DSAI 2009, Software Development for Enhancing Accessibility and Fighting Info-exclusion, 3-5 June, 2009. Lisboa, Portugal. Member of the organizing committee.

### 4.6 Editor of Collective Volume

- DSAI 2010, *Proceedings of the 3rd Conference on Software Development for Enhancing Accessibility and Fighting Info-exclusion*, Eds. P. Gnanayutham, H. Paredes, I.T. Rekanos, 25-26 Nov., 2010. Oxford, UK. ISBN: 978-972-669-994-1.

### 4.7 Reviewer of Research Projects

- Reviewer of research projects submitted to the Greek State Scholarship Foundation (PhD Scholarship Program 2011-2012).
- Reviewer of research projects submitted to the Greek State Scholarship Foundation (Postdoctoral Scholarship Program 2012-2013).
- Reviewer of research projects submitted to the Research Council of Norway (2013).

### 4.8 Professional Bodies and Organizations

- Senior Member of the Institute of Electrical and Electronics Engineers (IEEE)
- Member of the Marie Curie Fellowship Association (MCFA).
- Member of the Applied Computational Electromagnetics Society (ACES)
- Member of the International Compumag Society (ICS)
- Member of the Technical Chamber of Greece (TEE).
- Member of the Hellenic Institute of Acoustics (EAINA)

### 4.9 Invited Presentations-Lectures

- Progress in Electromagnetic Research Symposium, Nantes, France, 13-17 July, 1998.
- IEEE Instrumentation and Measurement Technology Conference, Venice, Italy, 24-26 May, 1999.



- Progress in Electromagnetic Research Symposium, Osaka, Japan, 18-22 July, 2001.
- Progress in Electromagnetic Research Symposium, Cambridge, Massachusetts, USA, 1-5 July, 2002.
- Annual Review on Progress in Applied Computational Electromagnetics (ACES 2007), Verona, Italy, 19-23 Mar., 2007.
- Progress in Electromagnetic Research Symposium, Prague, Czech Republic, 6-9 July, 2015,

## **5. ADMINISTRATIVE POSITIONS & DELEGATIONS**

### **5.1 School of Electrical and Computer Engineering - AUTH**

- Director of the Applied and Computational Electromagnetics Lab. (2015-today)
- Member of the “Undergraduate Program Committee” of the SECE-AUTH (2014-today)
- Member (instructor or examiner) of the “Admission Exams Committee” in the SECE-AUTH, from other Institutes (2013-today)
- Participation in various other committees.

### **5.2 School of Mathematics, Physics, and Computational Sciences - AUTH**

- Member (instructor or examiner) of the “Committees of Admission Exams” in the schools of the Faculty of Engineering, AUTH, from other Institutes (2013-today)
- Member of the “Internal Evaluation Group (OMEA)” of the SMPCS, AUTH (2009-2013)
- Member of the “Council of Environment” AUTH (2010-2013).
- Member of the “System of Transfer and Accumulation of ECTS Units” Committee, SMPCS (2007).
- Member of the “Budget Distribution Algorithm Committee” of the Faculty of Engineering, AUTH (2010-2013).
- Participation in various other committees.

### **5.3 Dept. of Informatics and Communications, TEI of Serres**

- Director of the “Division of Telecommunications and Networks”. (2005-2006)
- Deputy Head of the Dept. of Informatics and Communications. (2005-2006)
- Deputy Director of the “Division of Telecommunications and Networks”. (2002-2005).
- Participation in various other department committees.

### **5.4 Technical Chamber of Greece**

Examination Committee Member for evaluating the Diploma Theses of Electrical and Computer Engineering graduates, in order to acquire professional rights (2010-today).

## 6. PUBLICATIONS

### 6.1 Doctoral Thesis

“Solution of the inverse electromagnetic scattering problem using the finite element method and nonlinear optimization,” School of Electrical & Computer Engineering, AUTH, 1998. Supervisor: Prof. T.D. Tsiboukis.

### 6.2 Book Chapters (International Publishers)

- [B.1] I.T. Rekanos, “Microwave imaging based on differential formulations of the direct scattering problem. Techniques in the frequency and the time domain,” *Microwave Nondestructive Evaluation and Imaging*, Ed.: M. Pastorino, Research Signpost: Kerala, India, pp. 95-119, 2002, ISBN: 81-7736-081-7.
- [B.2] I.T. Rekanos, T.P. Theodoulidis, S.M. Panas, and T.D. Tsiboukis, “Neural network inversion of impedance in eddy current testing of layered structures,” *Non Destructive Testing*, Eds.: D. van Hemelrijck & A. Anastassopoulos, A.A. Balkema, Rotterdam, pp. 217-222, 1996, ISBN: 90-5410-595-X.
- [B.3] L.J. Hadjileontiadis, I.T. Rekanos, and S.M. Panas, “Bioacoustic signals,” *Encyclopedia of Biomedical Engineering*, Ed.: M. Akay, Wiley and Sons, New York, USA, 2006, ISBN: 047124967X.
- [B.4] L.J. Hadjileontiadis, I.T. Rekanos, and S.M. Panas, “Higher-order statistics,” *Encyclopedia of Biomedical Engineering*, Ed.: M. Akay, Wiley and Sons, New York, USA, 2006, ISBN: 047124967X.
- [B.5] I.T. Rekanos and M.A. Kanaki, “Microwave imaging of two-dimensional conducting scatterers using particle swarm optimization,” *Electromagnetic Fields in Mechatronics, Electrical and Electronic Engineering*, vol. 27, Eds. A. Krawczyk, S. Wiak, L.M. Fernandez, IOS Press, pp. 84-89, 2006, ISBN: 1586036270.

### 6.3 Publications in International Peer-Reviewed Journals

- [J.1] N.V. Kantartzis, I.T. Rekanos, and T.D. Tsiboukis, “A combined PML-Liao ABC for FDTD scattering analysis of spherically multilayered lossy dielectric media,” *International Journal of Theoretical Electrotechnics*, vol. 6, pp. 76-83, Sept. 1996.
- [J.2] I.T. Rekanos and T.D. Tsiboukis, “Electromagnetic field inversion using the quickprop method,” *IEEE Transactions on Magnetics*, vol. 33, no. 2, pp. 1872-1875, Mar. 1997.
- [J.3] I.T. Rekanos, T.P. Theodoulidis, S.M. Panas, and T.D. Tsiboukis, “Impedance inversion in eddy current testing of layered planar structures via neural networks,” *NDT&E International*, vol. 30, no. 2, pp. 69-74, Apr. 1997.
- [J.4] I.T. Rekanos and T.D. Tsiboukis, “Electromagnetic field inversion based on generalized radial basis functions,” *International Journal of Applied Electromagnetics and Mechanics*, vol. 9, no. 3, pp. 291-302, July 1998.
- [J.5] I.T. Rekanos, T.V. Yioultsis, and T.D. Tsiboukis, “Non destructive testing of layered structures using generalized radial basis function networks trained by the orthogonal least squares learning algorithm,” *COMPEL – The International Journal for Computation and Mathematics in Electrical and Electronic Engineering*, vol. 17, no. 1/2/3, pp. 382-388, 1998.
- [J.6] I.T. Rekanos and T.D. Tsiboukis, “A combined finite element - conjugate gradient spatial method for the reconstruction of unknown scatterer profiles,” *IEEE Transactions on Magnetics*, vol. 34, no. 5, pp. 2829-2832, Sept. 1998.
- [J.7] I.T. Rekanos, T.V. Yioultsis, and T.D. Tsiboukis, “Inverse scattering using the finite-element method and a nonlinear optimization technique,” *IEEE Transactions on Microwave Theory and Techniques*, vol. 47, no. 3, pp. 336-344, Mar. 1999.
- [J.8] I.T. Rekanos and T.D. Tsiboukis, “Inverse scattering using frequency-hopping,” *International Journal of Theoretical Electrotechnics*, vol. 7, pp. 12-15, Mar. 1999. **(invited)**.
- [J.9] I.T. Rekanos, C.S. Antonopoulos, and T.D. Tsiboukis, “Shape design of cylindrical probe coils for the induction of specified eddy current distributions,” *IEEE Transactions on Magnetics*, vol. 35, no. 3, pp. 1797-1800, May 1999.

- [J.10] I.T. Rekanos and T.D. Tsiboukis, "An iterative numerical method for inverse scattering problems," *Radio Science*, vol. 34, no. 6, pp. 1401-1412, Nov.-Dec. 1999.
- [J.11] I.T. Rekanos, S.M. Panas, and T.D. Tsiboukis, "Microwave imaging using the finite element method and a sensitivity analysis approach," *IEEE Transactions on Medical Imaging*, vol. 18, no. 11, pp. 1108-1114, Nov. 1999.
- [J.12] I.T. Rekanos and T.D. Tsiboukis, "A finite element based technique for microwave imaging of two-dimensional objects," *IEEE Transactions on Instrumentation and Measurement*, vol. 49, no. 2, pp. 234-239, Apr. 2000.
- [J.13] I.T. Rekanos, "On-line inverse scattering of conducting cylinders using radial basis-function neural networks," *Microwave and Optical Technology Letters*, vol. 28, no. 6, pp. 378-380, Mar. 20, 2001.
- [J.14] I.T. Rekanos, M.S. Efraimidou, and T.D. Tsiboukis, "Microwave imaging: Inversion of scattered near-field measurements," *IEEE Transactions on Magnetics*, vol. 37, no. 5, pp. 3294-3297, Sept. 2001.
- [J.15] I.T. Rekanos, "Inverse scattering of dielectric cylinders by using radial basis function neural networks," *Radio Science*, vol. 36, no. 5, pp. 841-849, Sept.-Oct. 2001.
- [J.16] X. Zhao, I.T. Rekanos, and P. Vainikainen, "A general computer simulation method for 3-D received signal level in wideband mobile communications," *Microwave and Optical Technology Letters*, vol. 32, no. 2, pp. 119-122, Jan. 20, 2002.
- [J.17] I.T. Rekanos, "Inverse scattering in the time domain: An iterative method using an FDTD sensitivity analysis scheme," *IEEE Transactions on Magnetics*, vol. 38, no. 2, pp. 1117-1120, Mar. 2002.
- [J.18] I.T. Rekanos, "A neural-network based inverse scattering technique for on-line microwave medical imaging," *IEEE Transactions on Magnetics*, vol. 38, no. 2, pp. 1061-1064, Mar. 2002.
- [J.19] I.T. Rekanos and T.D. Tsiboukis, "An inverse scattering technique for microwave imaging of binary objects," *IEEE Transactions on Microwave Theory and Techniques*, vol. 50, no. 5, pp. 1439-1441, May 2002.
- [J.20] H.M. El-Sallabi, G. Liang, H.L. Bertoni, I.T. Rekanos, and P. Vainikainen, "Influence of diffraction coefficient and corner shape on ray prediction of power and delay spread in urban microcells," *IEEE Transactions on Antennas and Propagation*, vol. 50, no. 5, pp. 703-712, May 2002.
- [J.21] H.M. El-Sallabi, I.T. Rekanos, and P. Vainikainen, "A new heuristic diffraction coefficient for lossy dielectric wedges at normal incidence," *IEEE Antennas and Wireless Propagation Letters*, vol. 1, pp. 165-168, 2002. [Errata, *IEEE Antennas and Wireless Propagation Letters*, vol. 1, pp. 219, 2002].
- [J.22] I.T. Rekanos, "Time-domain inverse scattering using Lagrange multipliers: An iterative FDTD-based optimization technique," *Journal of Electromagnetic Waves and Applications*, vol. 17, no. 2, pp. 271-289, Feb. 2003.
- [J.23] I.T. Rekanos and A. Räsänen, "Microwave imaging in the time domain of buried multiple scatterers by using an FDTD-based optimization technique," *IEEE Transactions on Magnetics*, vol. 39, no. 3, pp. 1381-1384, May 2003.
- [J.24] L.J. Hadjileontiadis and I.T. Rekanos, "Detection of explosive lung and bowel sounds by means of fractal dimension," *IEEE Signal Processing Letters*, vol. 10, no. 10, pp. 311-314, Oct. 2003.
- [J.25] C.D. Saragiotis, L.J. Hadjileontiadis, I.T. Rekanos, and S.M. Panas, "Automatic P phase picking using maximum kurtosis and  $z$ -statistics criteria," *IEEE Geoscience and Remote Sensing Letters*, vol. 1, no. 3, pp. 147-151, July 2004.
- [J.26] I.T. Rekanos, T.V. Yioultsis, and C.S. Hilas, "An inverse scattering approach based on the differential E-formulation," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 42, no. 7, pp. 1456-1461, July 2004.
- [J.27] I.T. Rekanos and T.V. Yioultsis, "Convergence enhancement for the vector finite element modeling of microwaves and antennas via differential evolution," *International Journal of Electronics and Communications (AEÜ)*, vol. 60, no. 6, pp. 428-434, June 2006.
- [J.28] S. Tsitsos, A.A.P. Gibson, L.E. Davis, and I.T. Rekanos, "Design of 3-pole PCS-type monoblock filter using an equivalent circuit approach," *International Journal of Electronics and Communications (AEÜ)*, vol. 60, no. 9, pp. 638-646, Oct. 2006.
- [J.29] I.T. Rekanos and L.J. Hadjileontiadis, "An iterative kurtosis-based technique for the detection of nonstationary bioacoustic signals," *Signal Processing*, vol. 86, no. 12, pp. 3787-3795, Dec. 2006.
- [J.30] A. Apostoloudia, E. Douka, L.J. Hadjileontiadis, I.T. Rekanos, and A. Trochidis, "Time-frequency analysis of transient dispersive waves: A comparative study," *Applied Acoustics*, vol. 68, no. 3, pp. 296-309, Mar. 2007.

- [J.31] T.V. Yioultzis, T.I. Kosmanis, I.T. Rekanos, and T.D. Tsiboukis, "EMC analysis of high-speed on-chip interconnects via a mixed quasi-static finite difference – FEM technique," *IEEE Transactions on Magnetics* vol. 43, no. 4, pp. 1365-1368, Apr. 2007.
- [J.32] A. Apostoloudia, E. Douka, L.J. Hadjileontiadis, I.T. Rekanos, and A. Trochidis, "Crack detection on beams by time-frequency analysis of transient flexural waves," *Archives of Acoustics*, vol. 32, no. 4, pp. 843-856, 2007.
- [J.33] I.T. Rekanos and A. Trochidis, "Shape reconstruction of two-dimensional acoustic obstacle using particle swarm optimization," *Acta Acustica united with Acustica*, vol. 93, no. 6, pp. 917-923, Nov.-Dec. 2007.
- [J.34] I.T. Rekanos, "Shape reconstruction of perfectly conducting scatterer using differential evolution and particle swarm optimization," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 46, no. 7, pp. 1967-1974, July 2008.
- [J.35] S.K. Goudos, I.T. Rekanos, and J.N. Sahalos, "EMI reduction and ICs optimal arrangement inside high speed networking equipment using particle swarm optimization," *IEEE Transactions on Electromagnetic Compatibility*, vol. 50, no. 3, pp. 586-596, Aug. 2008.
- [J.36] K.V. Deligkaris, Z.D. Zaharis, D.G. Kampitaki, S.K. Goudos, I.T. Rekanos, and M.N. Spasos, "Thinned planar array design using boolean PSO with velocity mutation," *IEEE Transactions on Magnetics*, vol. 45, no. 3, pp. 1490-1493, Mar. 2009.
- [J.37] S.K. Goudos, Z.D. Zaharis, D.G. Kampitaki, I.T. Rekanos, and C.S. Hilas, "Pareto optimal design of dual band base station antenna arrays using multi-objective particle swarm optimization with fitness sharing," *IEEE Transactions on Magnetics*, vol. 45, no. 3, pp. 1522-1525, Mar. 2009.
- [J.38] K. Zacharias, E. Balabanidou, I. Hatzokos, I.T. Rekanos and A. Trochidis, "Microdamage evaluation in human trabecular bone based on nonlinear ultrasound vibro-modulation (NUVM)," *Journal of Biomechanics*, vol. 42, no. 5, pp. 581-586, Mar. 2009.
- [J.39] A. Semnani, M. Kamyab, and I.T. Rekanos, "Reconstruction of one-dimensional dielectric scatterers using differential evolution and particle swarm optimization," *IEEE Geoscience and Remote Sensing Letters*, vol. 6, no. 4, pp. 671-675, Oct. 2009.
- [J.40] I.T. Rekanos and T.G. Papadopoulos, "FDTD modeling of wave propagation in Cole-Cole media with multiple relaxation times," *IEEE Antennas and Wireless Propagation Letters*, vol. 9, pp. 67-69, 2010.
- [J.41] A. Semnani, I.T. Rekanos, M. Kamyab, and T.G. Papadopoulos, "Two-dimensional microwave imaging based on hybrid scatterer representation differential evolution," *IEEE Transactions on Antennas and Propagation*, vol. 58, no. 10, pp. 3289-3298, Oct. 2010.
- [J.42] I.T. Rekanos and T.G. Papadopoulos, "An auxiliary differential equation method for FDTD modeling of wave propagation in Cole-Cole dispersive media," *IEEE Transactions on Antennas and Propagation*, vol. 58, no. 11, pp. 3666-3674, Nov. 2010.
- [J.43] A.I. Dimitriadis, N.V. Kantartzis, I.T. Rekanos, and T.D. Tsiboukis, "Efficient metafilm/metasurface characterization for obliquely incident TE waves via surface susceptibility models," *IEEE Transactions on Magnetics*, vol. 48, no. 2, pp. 367-370, Feb. 2012.
- [J.44] T.G. Papadopoulos and I.T. Rekanos, "Estimation of the parameters of Lorentz dispersive media using a time-domain inverse scattering technique," *IEEE Transactions on Magnetics*, vol. 48, no. 2, pp. 219-222, Feb. 2012.
- [J.45] T.G. Papadopoulos and I.T. Rekanos, "Time-domain microwave imaging of inhomogeneous Debye dispersive scatterers," *IEEE Transactions on Antennas and Propagation*, vol. 60, no. 2, pp. 1197-1202, Feb. 2012.
- [J.46] I.T. Rekanos, "FDTD modeling of Havriliak-Negami media," *IEEE Microwave and Wireless Components Letters*, vol. 22, no. 2, pp. 49-51, Feb. 2012.
- [J.47] I.T. Rekanos, "FDTD schemes for wave propagation in Davidson-Cole dispersive media using auxiliary differential equations," *IEEE Transactions on Antennas and Propagation*, vol. 60, no. 3, pp. 1467-1478, Mar. 2012.
- [J.48] I.T. Rekanos, "Semi-local approximation of fractional derivatives in FDTD modeling of Cole-Cole media: A questionable approach," *IEEE Antennas and Wireless Propagation Letters*, vol. 11, pp. 740-743, 2012.
- [J.49] S.D. Assimonis, T.V. Yioultzis, I.T. Rekanos, E.E. Kriezis, and C.S. Antonopoulos, "Design and optimization of uniplanar EBG structures," *International Journal of Applied Electromagnetics and Mechanics*, vol. 39, no. 1-4, pp. 615-621, Aug. 2012.

- [J.50] A. Semnani, I.T. Rekanos, M. Kamyab, and M. Moghaddam, "Solving inverse scattering problems based on truncated cosine Fourier and cubic B-spline expansions," *IEEE Transactions on Antennas and Propagation*, vol. 60, no. 12, pp. 5914-5923, Dec. 2012.
- [J.51] C.S. Hilar, I.T. Rekanos, and P.A. Mastorocostas, "Change point detection in time series using higher-order statistics: A heuristic approach," *Mathematical Problems in Engineering*, vol. 2013, Art. ID 317613, 10 pages, 2013.
- [J.52] I.T. Rekanos and T.V. Yioultsis, "Approximation of Grünwald-Letnikov fractional derivative for FDTD modeling of Cole-Cole media," *IEEE Transactions on Magnetics*, vol. 50, no. 2, Art. No. 7004304, Feb. 2014.
- [J.53] C.S. Hilar, P.A. Mastorocostas, and I.T. Rekanos, "Clustering of telecommunications user profiles for fraud detection and security enhancement in large corporate networks: a case study," *Applied Mathematics and Information Sciences*, vol. 9, no. 4, pp. 1709-1718, July 2015.
- [J.54] D.A. Ketzaki, I.T. Rekanos, T.I. Kosmanis, and T.V. Yioultsis, "Beam propagation method based on the iterated Crank-Nicolson scheme for solving large-scale wave propagation problems," *IEEE Transactions on Magnetics*, vol. 51, no. 3, Art. No. 7204404, Mar. 2015.
- [J.55] I.T. Rekanos, "Comments on "Fractional derivative based FDTD modeling of transient wave propagation in Havriliak-Negami media"," *IEEE Transactions on Microwave Theory and Techniques*, vol. 63, no. 12, pp. 4188-4190, Dec. 2015.
- [J.56] T.I. Kosmanis, I.T. Rekanos, and S.P. Tsitsos, "Optimal design of PCS ceramic microwave filters using the differential evolution algorithm," *ACES Journal*, vol. 31, no. 4, pp. 361-365, Apr. 2016.

## 6.4 Publications in Refereed International Conference Proceedings

- [P.1] I.T. Rekanos, T.V. Yioultsis, and C.S. Antonopoulos, "Propagation through the earth with a rectangular cross-section conducting structure embedded in it. The inverse problem," *URSI, Proceedings of the 1995 International Symposium on Electromagnetic Theory*, St. Petersburg, Russia, May 23-26, 1995, pp.151-153. **(URSI Young Scientist Award: ITR)**
- [P.2] I.T. Rekanos, T.V. Yioultsis, and T.D. Tsiboukis, "An efficient finite element - neural network approach to the solution of inverse problems in electromagnetism," *URSI, Proceedings of the 1995 International Symposium on Electromagnetic Theory*, St. Petersburg, Russia, May 23-26, 1995, pp. 252-254. **(URSI Young Scientist Award: ITR)**
- [P.3] I.T. Rekanos and T.D. Tsiboukis, "Electromagnetic field inversion using the quickprop method," *IEEE CEFC '96, Proceedings of the 7<sup>th</sup> Biennial IEEE Conference on Electromagnetic Field Computation*, Okayama, Japan, March 18-20, 1996, pp. 152.
- [P.4] I.T. Rekanos, and T.D. Tsiboukis, "A parallel solution method for finite elements based on Hopfield neural network. An application to an eddy current problem," *IEEE CEFC '96, Proceedings of the 7<sup>th</sup> Biennial IEEE Conference on Electromagnetic Field Computation*, Okayama, Japan, March 18-20, 1996, pp. 242.
- [P.5] I.T. Rekanos, T.V. Yioultsis, and T.D. Tsiboukis, "Non destructive testing of layered structures using generalized radial basis functions networks trained by the orthogonal least squares learning algorithm," *ISEF '97*, Gdansk, Poland, Sept. 15-27, 1997, pp. 144-147.
- [P.6] I.T. Rekanos and T.D. Tsiboukis, "A combined finite element - conjugate gradient spatial method for the reconstruction of unknown scatterer profiles," *COMPUMAG '97, Proceedings of the 11<sup>th</sup> Conference on the Computation of Electromagnetic Fields*, Rio de Janeiro, Brazil, Nov. 3-6, 1997, vol. 2, pp. 829-830.
- [P.7] I.T. Rekanos and T.D. Tsiboukis, "Reconstruction of the constitutive parameters of cylindrical structures using transverse electric irradiation," *URSI, Proceedings of the 1998 International Symposium on Electromagnetic Theory*, Thessaloniki, Greece, 25-28 May, 1998, vol. 2, pp. 515-517.
- [P.8] G.A. Kougiialis, T.P. Theodoulidis, I.T. Rekanos, and C.S. Antonopoulos, "Determination of the excitation current for the generation of specified eddy currents. An analytical approach," *URSI, Proceedings of the 1998 International Symposium on Electromagnetic Theory*, Thessaloniki, Greece, 25-28 May, 1998, vol. 2, pp. 828-830.
- [P.9] I.T. Rekanos, C.S. Antonopoulos, and T.D. Tsiboukis, "Inverse scattering for binary objects using a combined finite element - nonlinear optimization technique," *IEEE CEFC '98, Proceedings of the 8<sup>th</sup> Biennial IEEE Conference on Electromagnetic Field Computation*, Tucson, Arizona, USA, 1-3 June, 1998, pp. 149.

- [P.10] I.T. Rekanos, C.S. Antonopoulos, and T.D. Tsiboukis, "Shape design of cylindrical probe coils for the induction of specified eddy current distributions," *IEEE CEFC '98, Proceedings of the 8<sup>th</sup> Biennial IEEE Conference on Electromagnetic Field Computation*, Tucson, Arizona, USA, 1-3 June, 1998, pp. 23.
- [P.11] I.T. Rekanos and T.D. Tsiboukis, "Neural network architectures for the estimation of layered structures in eddy current nondestructive testing applications," *PIERS '98, Progress in Electromagnetic Research Symposium*, Nantes, France, 13-17 July, 1998, vol. 2, pp. 736. **(invited)**
- [P.12] I.T. Rekanos and T.D. Tsiboukis, "Reconstruction of the complex permittivity profiles of maxwellian scatterers by means of multiple frequencies of irradiation. A finite element - sensitivity analysis technique," *PIERS '98, Progress in Electromagnetic Research Symposium*, Nantes, France, 13-17 July, 1998, vol. 1, pp. 298.
- [P.13] I.T. Rekanos and T.D. Tsiboukis, "A finite element based technique for microwave imaging of two-dimensional objects," *IEEE IMTC '99, The 16<sup>th</sup> IEEE Instrumentation and Measurement Technology Conference*, Venice, Italy, 24-26 May, 1999, vol. 3, pp. 1576-1581. **(invited)**
- [P.14] I.T. Rekanos, M.S. Efraimidou, and T.D. Tsiboukis, "Microwave imaging: Inversion of scattered near-field measurements," *IEEE CEFC 2000, Proceedings of the 9<sup>th</sup> Biennial IEEE Conference on Electromagnetic Field Computation*, Milwaukee, Wisconsin, USA, 4-7 June, 2000, pp. 130.
- [P.15] I.T. Rekanos, M.S. Efraimidou, T.V. Yioultsis, C.S. Antonopoulos, T.D. Tsiboukis, and E.E. Kriezis, "Microwave imaging of two-dimensional scatterers by inverting scattered near-field measurements," *ISAPE 2000, Proceedings of the 5<sup>th</sup> International Symposium on Antennas, Propagation, and EM Theory*, Beijing, China, 15-18 August, 2000, pp. 187-190.
- [P.16] I.T. Rekanos, "Inverse scattering in the time domain: The distorted Born iterative method using an FDTD sensitivity analysis scheme," *COMPUMAG '2001, Proceedings of the 13<sup>th</sup> Conference on the Computation of Electromagnetic Fields*, Evian, France, July 2-5, 2001, vol. 3, pp. 18-19.
- [P.17] I.T. Rekanos, "A neural network based inverse scattering technique for on-line microwave medical imaging," *COMPUMAG '2001, Proceedings of the 13<sup>th</sup> Conference on the Computation of Electromagnetic Fields*, Evian, France, July 2-5, 2001, vol. 4, pp. 128-129.
- [P.18] I.T. Rekanos, "Radial basis function neural networks for on-line inverse scattering applications," *PIERS '2001, Progress in Electromagnetic Research Symposium*, Osaka, Japan, 18-22 July, 2001, pp. 139. **(invited)**
- [P.19] M.A. Kanaki and I.T. Rekanos, "Estimation of the monthly median foF2 value by using neural networks," *PIERS '2001, Progress in Electromagnetic Research Symposium*, Osaka, Japan, 18-22 July, 2001, pp. 427.
- [P.20] X. Zhao, I.T. Rekanos, and P. Vainikainen, "A general simulation method for 3-D received signal level in wideband mobile communications," *WPMC '01, The 4<sup>th</sup> International Symposium on Wireless Personal Multimedia Communications*, Aalborg, Denmark, Sept. 9-12, 2001, vol. 2, pp. 493-496.
- [P.21] I.T. Rekanos, "Microwave imaging in the time domain of buried multiple scatterers by using an FDTD-based optimization technique," *IEEE CEFC 2002, Proceedings of the 10<sup>th</sup> Biennial IEEE Conference on Electromagnetic Field Computation*, Perugia, Italy, 16-19 June, 2002, pp. 186.
- [P.22] I.T. Rekanos, "Microwave imaging in the time domain using the FDTD method," *PIERS '2002, Progress in Electromagnetic Research Symposium*, Cambridge, Massachusetts, USA, 1-5 July, 2002, pp. 23. **(invited)**
- [P.23] M.A. Kanaki and I.T. Rekanos, "Modeling of the monthly median foF2 value by utilizing radial basis function neural networks," *PIERS '2002, Progress in Electromagnetic Research Symposium*, Cambridge, Massachusetts, USA, 1-5 July, 2002, pp. 481.
- [P.24] L.J. Hadjileontiadis and I.T. Rekanos, "On efficiently detecting fine/coarse crackles and squawks in lung sound recordings by means of fractal dimension," *12<sup>th</sup> European Respiratory Society Annual Congress*, Stockholm, Sweden, 14-18 Sept., 2002. (Also in *European Respiratory Journal*, vol. 20, suppl. 38, pp. 33, Sept. 2002).
- [P.25] L.J. Hadjileontiadis and I.T. Rekanos, "Fractal dimension: A simple tool for efficient detection of discontinuous lung sounds," *27<sup>th</sup> Annual Conference of the International Lung Sounds Association*, Stockholm, Sweden, 12-13 Sept., 2002, pp. 9.
- [P.26] X. Zhao, I.T. Rekanos, and P. Vainikainen, "A recommended Maliuzhinets diffraction coefficient for right angle lossy wedges," *IEE, EPMCC 2003, 5<sup>th</sup> European Personal Mobile Communication Conference*, Glasgow, Scotland, UK, 22-25 April, 2003, pp. 195-198.
- [P.27] T.V. Yioultsis, I.T. Rekanos, and T.D. Tsiboukis, "Investigation of optimization techniques for the convergence improvement of higher-order Whitney element FEM in RF and microwave analysis," *COMPUMAG 2003, Proceedings of the 14<sup>th</sup> Conference on the Computation of Electromagnetic Fields*, Saratoga Springs, New York, USA, 13-17 July, 2003, pp. 208-209.

- [P.28] L.J. Hadjileontiadis and I.T. Rekanos, and T. Penzel, “De-noising of discontinuous lung sounds using kurtosis-based filtering,” *28<sup>th</sup> Annual Conference of the International Lung Sounds Association*, Cancun, Mexico, 15-16 Sept., 2003, p. 29.
- [P.29] I.T. Rekanos, T.V. Yioultsis, and C.S. Hilas, “Microwave imaging technique based on vector finite elements,” *ISEF '03*, Maribor, Slovenia, 18-20 Sept., 2003, vol. 2, pp. 697-702.
- [P.30] L.J. Hadjileontiadis and I.T. Rekanos, “Enhancement of explosive bowel sounds using kurtosis-based filtering,” *25<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society, IEEE EMBS 2003*, Cancun, Mexico, 17-21 Sept., 2003, pp. 2479-2482.
- [P.31] P.A. Mastorocostas and I.T. Rekanos, “Simulated annealing dynamic RPROP for training recurrent fuzzy systems,” *14<sup>th</sup> IEEE International Conference on Fuzzy Systems*, Reno, Nevada, USA, 22-25 May, 2005, pp. 1086-1091.
- [P.32] T.V. Yioultsis, T.I. Kosmanis, I.T. Rekanos, and T.D. Tsiboukis, “Investigation of EMC in high-speed on-chip transmission lines by a new quasi-static finite difference – FEM technique,” *6<sup>th</sup> International Symposium on Electromagnetic Compatibility and Electromagnetic Ecology*, St. Petersburg, Russia, 21-24 June, 2005, pp. 171-174.
- [P.33] P. Mastorocostas, D. Varsamis, C. Mastorocostas, and I.T. Rekanos, “An accelerating learning algorithm for block-diagonal recurrent neural networks,” *Int. Conf. on Computational Intelligence for Modeling, Control and Automation, CIMCA 2005*, Vienna, Austria, 28-30 Nov., 2005, vol. 2, pp. 403-408.
- [P.34] T.V. Yioultsis, T.I. Kosmanis, I.T. Rekanos, and T.D. Tsiboukis, “EMC analysis of high-speed on-chip interconnects via a mixed quasi-static finite difference – FEM technique,” *IEEE CEFC 2006, Proceedings of the 12<sup>th</sup> Biennial IEEE Conference on Electromagnetic Field Computation*, Miami, Florida, USA, 30 April - 3 May, 2006, pp. 266.
- [P.35] A. Apostoloudia, E. Douka, L.J. Hadjileontiadis, I.T. Rekanos, and A. Trochidis, “Damage detection in beams using time-frequency analysis of transient flexural waves,” *13<sup>th</sup> International Congress on Sound and Vibration*, Vienna, Austria, 2-6 July, 2006, 8 pages.
- [P.36] S.K. Goudos, C.S. Hilas, I.T. Rekanos, and J.N. Sahalos, “EMI from ICs and PCBs inside high speed networking equipment,” *EMC Europe 2006*, Barcelona, Spain, 4-8 Sept., 2006, pp. 437-442.
- [P.37] I.T. Rekanos and A. Trochidis, “Acoustic obstacle shape reconstruction using differential evolution and particle swarm optimization: A comparative study,” *Int. Conf. on Theoretical and Computational Acoustics '07*, (Eds: M. Taroudakis and P. Papadakis), Heraklion, Greece, 2-5 July, 2007, pp. 171-180.
- [P.38] I.T. Rekanos, “Conducting scatterer reconstruction using differential evolution and particle swarm optimization,” *23<sup>rd</sup> Annual Review on Progress in Applied Computational Electromagnetics (ACES 2007)*, Verona, Italy, 19-23 Mar., 2007, pp. 1299-1304. **(invited)**
- [P.39] K.V. Deligkaris, Z.D. Zaharis, D.G. Kampitaki, S.K. Goudos, I.T. Rekanos, and M.N. Spasos, “Thinned planar array design using boolean PSO with velocity mutation,” *IEEE CEFC 2008, Proceedings of the 13<sup>th</sup> Biennial IEEE Conference on Electromagnetic Field Computation*, Athens, Greece, 11-16 May, 2008, pp. 324.
- [P.40] S.K. Goudos, Z.D. Zaharis, D.G. Kampitaki, I.T. Rekanos, and C.S. Hilas, “Pareto optimal design of dual band base station antenna arrays using multi-objective particle swarm optimization with fitness sharing,” *IEEE CEFC 2008, Proceedings of the 13<sup>th</sup> Biennial IEEE Conference on Electromagnetic Field Computation*, Athens, Greece, 11-16 May, 2008, pp. 472.
- [P.41] K. Zacharias, E. Balabanidou, I. Hatzokos, L.J. Hadjileontiadis, E. Douka, I.T. Rekanos, and A. Trochidis, “Microdamage evaluation in human trabecular bone using non-linear ultrasound,” *Proceeding of the 6<sup>th</sup> International Conference on Engineering Computational Technology (Civil-Comp Press 2008)*, Athens, Greece, 2-5 Sept. 2008, paper 55, pp. 1-9.
- [P.42] T.I. Kosmanis and I.T. Rekanos, “Differential evolution algorithm and a hybrid time domain technique,” *2<sup>nd</sup> Int. Conf. on Modern Power Systems MPS 2008*, Cluj-Napoca, Romania, 12-14 Nov. 2008, pp. 366-369.
- [P.43] C.S. Hilas, I.T. Rekanos, S.K. Goudos, P.A. Mastorocostas, and J.N. Sahalos, “Level change detection in time series using higher order statistics,” *16<sup>th</sup> Int. Conf. on Digital Signal Processing, DSP 2009*, Santorini, Greece, 5-7 July, 2009, pp. 1-6.
- [P.44] T.G. Papadopoulos and I.T. Rekanos, “FDTD modeling of wave propagation in higher order Cole-Cole media using auxiliary differential equations,” *26<sup>th</sup> Int. Review of Progress in Applied Computational Electromagnetics (ACES 2010)*, Tampere, Finland, 26-29 April 2010, pp. 230-235.



- [P.45] A. Semnani, I.T. Rekanos, and M. Kamyab, "One-dimensional profile reconstruction using cosine Fourier and cubic B-spline expansions," *Proc. 40<sup>th</sup> European Microwave Conf. (EuMA 2010)*, Paris, France, 28-30 Sept. 2010, pp. 1341-1344. **(Travel Grant: AS)**
- [P.46] A. Semnani, I.T. Rekanos, M. Kamyab, and C.S. Antonopoulos, "Solving 2-D inverse scattering problems using truncated cosine Fourier and cubic B-spline expansions," *PIERS '2011, Progress in Electromagnetic Research Symposium*, Marrakesh, Morocco, 20-23 Mar., 2011, pp. 538-539.
- [P.47] T.G. Papadopoulos and I.T. Rekanos, "Estimation of the parameters of Lorentz dispersive media using a time-domain inverse scattering technique," *COMPUMAG 2011, Proceedings of the 18<sup>th</sup> Conference on the Computation of Electromagnetic Fields*, Sydney, Australia, 12-15 July, 2011, pp. (2).
- [P.48] A.I. Dimitriadis, N.V. Kantartzis, I.T. Rekanos, and T.D. Tsiboukis, "Efficient metafilm/metasurface characterization for obliquely incident TE waves via surface susceptibility models," *COMPUMAG 2011, Proceedings of the 18<sup>th</sup> Conference on the Computation of Electromagnetic Fields*, Sydney, Australia, 12-15 July, 2011, pp. (2).
- [P.49] I.T. Rekanos, "FDTD modeling of wave propagation in dispersive Havriliak-Negami media," *COMPUMAG 2011, Proceedings of the 18<sup>th</sup> Conference on the Computation of Electromagnetic Fields*, Sydney, Australia, 12-15 July, 2011, pp. (2).
- [P.50] T.G. Papadopoulos and I.T. Rekanos, "Estimation of the parameters of 2D Debye dispersive media using a time-domain inverse scattering technique," *URSI 30<sup>th</sup> General Assembly and Scientific Symposium of the Int. Union of Radio Science*, Istanbul, Turkey 13-20 August, 2011, pp. (4). **(URSI Young Scientist Award: TGP)**
- [P.51] S.D. Assimonis, T.V. Yioultsis, I.T. Rekanos, E.E. Kriezis, and C.S. Antonopoulos, "Design and optimization of uniplanar EBG structures," *ISEM 2011, Proceedings of the 15<sup>th</sup> International Symposium on Applied Electromagnetics and Mechanics*, Napoli, Italy, 6-9 Sept. 2011, pp. (2).
- [P.52] D.A. Ketzaki, D.K. Ntaikos, I.T. Rekanos, and T.V. Yioultsis, "Planar metamaterial-based MIMO antennas," *META 2014, Proceedings of the 4<sup>th</sup> International Conference on Metamaterials, Photonic Crystals and Plasmonics*, Sharjah, United Arab Emirates, 18-22 Mar. 2013, pp. (3).
- [P.53] I.T. Rekanos and T.V. Yioultsis, "Approximation of Grünwald-Letnikov fractional derivative for FDTD modeling of Cole-Cole media," *COMPUMAG 2013, Proceedings of the 19<sup>th</sup> Conference on the Computation of Electromagnetic Fields*, Budapest, Hungary, 30 June - 4 July, 2013, pp. (2).
- [P.54] C.S. Hilas, S.A. Kazarlis, I.T. Rekanos, and P.A. Mastorocostas, "A genetic programming approach to telecommunications fraud detection and classification," *CSSCC 2014, Proceedings of the 2014 International Conference on Circuits, Systems, Signal Processing, Communications and Computers*, Venice, Italy, 15-17 Mar. 2014, pp. 77-83.
- [P.55] D.A. Ketzaki, I.T. Rekanos, T.I. Kosmanis, and T.V. Yioultsis, "Beam propagation method based on the iterated Crack-Nicolson scheme for solving large-scale wave propagation problems," *IEEE CEFC 2014, Proceedings of the 16<sup>th</sup> Biennial IEEE Conference on Electromagnetic Field Computation*, Annecy, France, 25-28 May, 2014, p. (1).
- [P.56] T.G. Papadopoulos, T.I. Kosmanis, and I.T. Rekanos, "Microwave imaging of dispersive scatterers using vectorial Lagrange multipliers," *PIERS '2015, Progress in Electromagnetic Research Symposium*, Prague, Czech Republic, 6-9 July, 2015, pp. 1926-1931. **(invited)**

## 6.5 Publications in National Conferences

- [T.1] G. Bamnios, K. Zacharias, I.T. Rekanos and A. Trochidis, "Design and implementation of novel sound barriers with improved efficiency," *4<sup>th</sup> Hellenic Institute of Acoustics Conference, ACOUSTICS 2008*, Xanthi, Greece, June 2009, pp. 285-293. (in Greek)
- [T.2] K. Zacharias, E. Balabanidou, I. Hatzokos, L. Hadjileontiadis, I.T. Rekanos, and A. Trochidis, "Estimation of bone quality using nonlinear ultrasound," *4<sup>th</sup> Hellenic Institute of Acoustics Conference, ACOUSTICS 2008*, Xanthi, Greece, June 2009, pp. 319-325. (in Greek)

## 6.6 Lectures and Other Presentations

- [O.1] I.T. Rekanos and S.M. Panas, "Speaker recognition via unsupervised competitive learning neural networks," *Real and Complex Analysis and Applications*, Erasmus Meeting on Signal Analysis and Related Topics, ICP-93-1260/11 and ICP-93-2004/11, Aristotle University of Thessaloniki, Oct. 10-13, 1993.

- [O.2] I.T. Rekanos, “Microwave inverse scattering,” *Annual Scientific Workshop of the Radio Laboratory*, Helsinki University of Technology, Espoo, Finland, Jan. 31, 2001.
- [O.3] I.T. Rekanos and A. Trochidis, “Finite difference computational scheme for nonlinear longitudinal wave propagation in damaged beams,” *1<sup>st</sup> Greek-French Workshop on Computational Aspects of Acoustic Wave Propagation*, Heraklion, Greece, 20-21 Sept., 2006.
- [O.4] I.T. Rekanos and A. Trochidis, “Shape reconstruction of two-dimensional acoustic obstacle using particle swarm optimization,” *1<sup>st</sup> Greek-French Workshop on Computational Aspects of Acoustic Wave Propagation*, Heraklion, Greece, 20-21 Sept., 2006.
- [O.5] I.T. Rekanos and A. Trochidis, “Analytical and numerical investigation of intermodulation phenomena in nonlinear longitudinal propagation of elastic waves,” *Int. Conf. on Theoretical and Computational Acoustics '09*, Dresden, Germany, 2-5 July, 2009.

## 6.7 Third-Party Citations Received (up to 25th October 2014)

Third-party citations -excluding self and co-authors- are summarized in the following table. It includes citations in international journals, conference proceedings, books, doctoral theses, and patents.

Publication	Third-party citations	Publication	Third-party citations	Publication	Third-party citations
B.1	1	J.19	21	J.42	8
B.3	1	J.20	23	J.43	2
B.4	2	J.21	19	J.44	1
B.5	1	J.22	35	J.45	4
J.2	4	J.23	39	J.46	6
J.3	33	J.24	70	J.47	6
J.4	1	J.25	10	J.48	1
J.5	4	J.26	17	J.49	3
J.6	13	J.27	4	J.50	4
J.7	54	J.29	11	J.51	2
J.8	3	J.30	18	P.4	3
J.9	2	J.31	4	P.15	3
J.10	9	J.33	10	P.18	1
J.11	27	J.34	87	P.26	1
J.12	41	J.35	7	P.30	3
J.13	27	J.36	22	P.31	1
J.14	12	J.37	18	P.33	3
J.15	12	J.38	11	P.38	4
J.16	1	J.39	33	P.43	2
J.17	10	J.40	14		
J.18	36	J.41	21		
Total number of third-party citations				846	H-Index 18
Scopus (third-party citations)				604	H-Index 15
Web of Science (third-party citations)				529	H-Index 14