Olha Ivanyshyn Yaman

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Professional appointments

05/2014–Current	**Assistant Professor**, *Department of Mathematics*, Izmir Institute of Technology, Turkey.
10/2010–04/2014	**Research Assistant**, *Computational Electromagnetics Laboratory (TEMF)*, Technische Universität Darmstadt, Germany. Project: "Fluid layers on insulating surfaces"
11/2007–10/2010	**Research Assistant**, *Institute for Numerical and Applied Mathematics*, University of Göttingen, Germany. SFB 755 "Nanoscale Photonic Imaging"; Project C2: " Inverse scattering problems without phase"

Education

31/10/2007	**Ph.D. in Mathematics**, University of Göttingen, Germany. Thesis: "Nonlinear Boundary Integral Equations in Inverse Scattering"; supervisor: Prof. Dr. Rainer Kress
09/2004–10/2007	**Graduate study**, University of Göttingen, Germany. Graduiertenkolleg 1023 "Identification in Mathematical Models: Synergy of Stochastic and Numerical Methods", DFG scholarship
09/2002–06/2003	**M.Sc. in Applied Mathematics and Informatics**, Ivan Franko National University of Lviv, Ukraine.
09/1998–06/2002	**B.Sc. in Applied Mathematics and Informatics**, Ivan Franko National University of Lviv, Ukraine.

Research areas

- Inverse problems, Scattering theory
- Integral equation methods
- Numerical solution of PDEs, numerical analysis

Research stays

02/2019	The University of Technology of Compiègne, France, LMAC Laboratoire de Mathématiques Appliquées de Compiègne *(1 week)*
06/2016	University of Göttingen, Germany, Institute for Numerical and Applied Mathematics *(1 week)*
09/2011	Isaac Newton Institute for Mathematical Sciences, Cambridge University, *UK (Visiting Fellow, 1 month)*
07/2006	Centre for CFD, SPEME, University of Leeds, UK. *Marie Curie host fellowship for early stage training (EST) (3 months)*

Projects and Supervised Students

2017-2019	Principal investigator of the TÜBITAK Project 116F299 "Identification of the acoustic obstacle coated by an inhomogeneous penetrable layer from the far field pattern"

2016	Supervisor of M.Sc. thesis "Boundary value problems for the Laplace equation using integral equation approach" by Gazi Özdemir

Teaching experience

Graduate	Integral Equations, Inverse Problems, Numerical Analysis
Undergraduate	Vector Analysis; Differential Equations; Analysis, Calculus I, II; Numerical Analysis

Refereed international journal papers

2019	Ivanyshyn Yaman, O., Reconstruction of generalized impedance functions for 3D acoustic scattering, *Journal of Computational Physics*, 392(1), 444-455
2018	Ivanyshyn Yaman, O., Özdemir, G., Boundary integral equations for the exterior Robin problem in two dimensions, *Applied Mathematics and Computation*, 337(15), 25-33
2018	Cakoni, F., Ivanyshyn Yaman, O., Kress, R., Le Louer, F., A Boundary Integral Equation for the Transmission Eigenvalue Problem for Maxwell's equation.*Math. Meth. Appl. Science 41, 1316-1330*
2017	Ivanyshyn Yaman, O. and Kress, R., Nonlinear integral equations for Bernoulli's free boundary value problem in three dimensions. *Computers and Mathematics with Applications*, 74(11): 2784-279
2016	Ivanyshyn Yaman, O. and Le Louer, F., Material derivatives of boundary integral operators in electromagnetism and application to inverse scattering problems. *Inverse Problems*, 32(9), 095003 (24pp).
2012	Chapko, R., Ivanyshyn, O., Protsyuk, O. On a nonlinear integral equation approach for the surface reconstruction in semi-infinite-layered domains. *Inverse Probl. Sci. Eng.*, 1–15.
2011	Ivanyshyn, O. and Kress R., Inverse scattering for surface impedance from phase-less far field data. *J. Comput. Phys.*, 230, 3443–3452.
2010	Ben Hassen, M.F., Ivanyshyn, O. and Sini M., Three-dimensional acoustic scattering by complex obstacles: the accuracy issue. *Inverse Problems*, 26(10): 105008, 29 pp.
2010	Ivanyshyn, O. and Kress R., Identification of sound-soft 3D obstacles from phaseless data. *Inverse Probl. Imaging*, 4(1): 131–149.
2009	Ivanyshyn, O., Kress R. and Serranho P., Huygens' principle and iterative methods in inverse obstacle scattering. *Adv. Comput. Math.*, 33(4): 413–429.
2008	Ivanyshyn, O. and Kress, R., Inverse scattering for planar cracks via nonlinear integral equations. *Math. Meth. Appl. Sciences*, 31(10):1221–1232.
2008	Ivanyshyn, O. and Johansson, T., Boundary integral equations for acoustical inverse sound-soft scattering. *J. Inverse Ill-Posed Probl.*, 16(1):65–78.
2007	Ivanyshyn, O., Shape reconstruction of acoustic obstacles from the modulus of the far field pattern. *Inverse Probl. Imaging*, 1(4):609–622.
2007	Ivanyshyn, O. and Johansson, T., Nonlinear integral equation methods for the reconstruction of an acoustically sound-soft obstacle. *J. Integral Equations Appl.*, 19(3):289–308.
2007	Bauer, F. and Ivanyshyn, O., Optimal regularization with two interdependent regularization parameters. *Inverse Problems*, 23(1):331–342.
2006	Ivanyshyn, O. and Kress, R., Nonlinear integral equations for solving inverse boundary value problems for inclusions and cracks. *J. Integral Equations Appl.*, 18(1):13–38.

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Refereed national journal papers

2019 Chapko, R., Ivanyshyn Yaman, O., Vavrychuk V.G., On the non-linear integral equation method for the reconstruction of an inclusion in the elastic body, *Journal of of Numerical (Computational) and Applied Mathematics*, 1 (130), 7-17.

2016 Chapko R., Ivanyshyn Yaman, O., Kanafotskyy, T., On the non-linear integral equation approaches for the boundary reconstruction in double-connected planar domains. *Zh. Obchysl. Prykl. Mat.*, 2(122), 7–20

2003 Chapko R. and Ivanyshyn, O., On the numerical methods based on integral equations for inverse parabolic problems. *Zh. Obchysl. Prykl. Mat.*, 88(1):4–16

2003 Ivanyshyn, O. and Chapko R., On numerical solution of time-dependent problem for the heat equation in two-connected domain. *Visn. L'viv. Univ., Ser. Prykl. Mat. Inform*, (6):46–56 *(ukrainian)*

Refereed international proceeding papers

2013 Ivanyshyn, O., Gjonaj, E. and Weiland, Th., Computation of singular electromagnetic fields using a hybrid DG-FEM method. *Proceedings of 2013 URSI International Symposium on Electromagnetic Theory (EMTS), 745–748*

2008 Ivanyshyn, O., Inverse acoustic obstacle scattering for far field without data. *Proceedings of the Institute of Acoustics* Vol. 30. Pt.2, 307–312

2007 Ivanyshyn, O. and Johansson, T., Reconstruction of acoustically sound-hard obstacles from the far field using a boundary integral equation method. *Mathematical Methods in Scattering Theory and Biomedical Engineering (Fotiatis, Massalas, eds)*, 47-56.

2006 Ivanyshyn, O. and Kress, R., Nonlinear integral equations in inverse obstacle scattering. *Mathematical Methods in Scattering Theory and Biomedical Engineering (Fotiatis, Massalas, eds)*, 39–50.

International workshops and conferences

2018 Symposium of the International Association for Boundary Element Methods Paris, France, *(talk)*

2017 Ukrainian Conference on Applied Mathematics 2017, Lviv, Ukraine, *(talk)*

2017 The 8th International Workshop on Differential Equations and Applications, Kuşadası, Turkey, *(talk)*

2017 Workshop on Integral Equations and Inverse Problems 2017, Göttingen, Germany, *(talk)*

2016 8th International Conference "Inverse Problems: Modeling And Simulation" 2016, Fethiye, Turkey, *(talk)*

2013 International Symposium on Electromagnetic Theory (EMTS) 2013, Hiroshima, Japan, *(talk)*

2011 Applied Inverse Problems 2011, College Station, USA, *(invited minisymposium talk)*

2010 Integral Equations 2010, Lviv, Ukraine, *(talk)*

2010 Inverse Problems: Modeling and Simulation, Antalya, Turkey, *(invited talk)*

2010 MMNS Workshop on Inverse Problems for Waves, Palaiseau , France, *(poster)*

2008 ECCOMAS 2008, Venice, Italy, *(invited minisymposium talk)*

2008 British Inverse Problems Society Workshop, Birmingham, UK, *(invited talk)*

2008 Inverse Scattering Problems, Sestri Levante, Italy, *(poster)*

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2008	Widening Horizons in Acoustics Research, Reading, UK, *(talk)*
2007	Waves 2007, Reading, UK *(talk)*
2007	Applied Inverse Problems 2007, Vancouver, Canada, *(invited minisymposium talk)*
2007	Workshop "Integral Equations and Shape Reconstruction", Göttingen, Germany, *(poster)*
2006	Workshop in Applied Mathematics, Linköping, Sweden *(shared talk)*
2006	Boundary element techniques, Ècole National des Ponts et Chaussées, Paris, France
2006	Summer School. Minicourse on Applied Inverse Problems, Florence, Italy
2006	Workshop "Statistical Inverse Problems", Göttingen, Germany, *(poster)*
2005	Workshop "Imaging from Wave Propagation", Minneapolis, USA, *(poster)*

Izmir, October 18, 2019

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