



ALEMDAR HASANOĞLU HASANOV

## CURRICULUM VITAE

June, 2013

### Education

1988, Doctor of Science in Physics and Mathematics

Thesis title: "*Mathematical Methods for Direct and Inverse Problems Related to Nondestructive Diagnostics of Elastoplastic Materials*"

Special Scientific Committee chaired by A.N. Tikhonov

Department of Computational Mathematics and Cybernetics, Moscow State University, Russia

1982, Candidate of Science (=PhD) in Physics and Mathematics

Thesis title: "*Numerical Methods for Contact Problems of Elasticity*" Advisers: A.A. Samarskii and V.B. Andreev

Department of Computational Mathematics and Cybernetics, Moscow State University, Russia

1976, Diploma (Mathematics), Department of Mathematics, Baku State University, Azerbaijan

### Professional Activities

2009-present, Professor and Head, Department of Mathematics and Computer Sciences,  
Dean of the Graduate School of Engineering and Science, Izmir University, Izmir - Turkey

1993-2009, Professor, Department of Mathematics, Kocaeli University, Izmit - Turkey

1994-2006, Chair, Applied Mathematics Division, Department of Mathematics, Kocaeli University

1994-2006, Head of Applied Mathematical Sciences Research Center, Kocaeli University

1997, Spring Semester, Visiting Professor, University of Nebraska - Lincoln, Department of Mathematics and Statistics, Lincoln, Nebraska, U.S.A.

1992-1993, Visiting Professor, Dept. of Mathematics, Marmara Research Centre, Turkey

1991, Visiting Professor, Moscow State University, Russia

1989-1992, Professor, Baku State University, Azerbaijan

1986-1988, Associate Professor, Moscow State University, Russia

1983-1985, Assistant Professor, Baku State University, Azerbaijan

1979-1982, Ph.D. Student, Moscow State University, Russia

1977-1978, Research Specialist, M. Keldysh Institute of Applied Mathematics, USSR Academy of Sciences, Moscow, Russia

### Research Interests

- Nonlinear Differential Equations
- Variational Methods
- Inverse Problems

- Numerical Methods
- Mathematical and Computational Modeling
- Mathematical Problems in Elasticity and Elastoplasticity
- Computational Materials Science
- Mathematical Methods in Electrochemistry

**Courses: Taught at Graduate Level**

Mathematical and Computational Modeling  
 Variational Methods for Elliptic Problems  
 Inverse Problems for Partial Differential Equations  
 Advanced Analysis  
 Selected Chapters of Partial Differential Equations  
 Sobolev Spaces  
 Variational Inequalities  
 Applied Functional Analysis  
 Weak Solution Theory for PDE  
 Scientific Computation  
 The Theory of Finite Element Method  
 Mathematical Theory of Elasticity  
 Finite Element Method for Engineers  
 Theory of Monotone Potential Operators

**Courses: Taught at Undergraduate Level**

Mathematical Analysis  
 Engineering Mathematics  
 Linear Algebra  
 Numerical Analysis  
 Modern Analysis  
 Applied Mathematics  
 Mathematical Modeling  
 Partial Differential Equations  
 Scientific English

**Projects, Grants**

MATHEMATICAL AND NUMERICAL SIMULATION OF BRINELL HARDNESS TESTING (01/1984-01/1985, Project Chair)

*All Union Physico-Technical and Radio-Technical Measurement Institute, Solnechnogorsk, Moscow Region*

MATHEMATICAL MODELING OF CONTACT PROBLEMS IN CYLINDRICAL SUPPORT WITH TEMPERATURE FORCES (01/1987-10/1988, Project Co-Chair)

*Engineering Sciences Institute of USSR Academy of Sciences, Moscow*

COMPUTATIONAL DIAGNOSTICS OF TEMPERATURE INSULATED MATERIALS (01/1988-01/1990, Project Chair)

*Scientific - Technological Union "Technology", Obninsk, Moscow Region*

THE GLOBAL MODELING AND SYSTEM ANALYSIS OF ENVIRONMENTAL PROCESSES IN KOCAELI REGION ( 09/1993-03/1994, Project Chair)

*Kocaeli Administration and Environmental Organization, Izmit, Turkey*

AN INVERSE SOURCE PROBLEM FOR A BENDING PLATE (10/1994-09/1995, Project Chair)

*Arcelik A. S., Bayramoglu, Istanbul, Turkey*

THE GLOBAL MODELING OF SOCIO-ECONOMICAL DEVELOPMENT OF KOCAELI REGION FOR

1965 - 1995 YEARS ( 01/1995-12/1995, Project Chair)

*Kocaeli Administration, Izmit, Turkey*

ENVIRONMENTAL CONTROL MODELING AND SOFTWARE (02/1996-01/1997, Project Chair)

*Istanbul , Istanbul, Turkey*

"INVERSE PROBLEMS: MODELING AND SIMULATION" (The First International Conference, Fethiye Turkey) (May, 2002, Project Co-Chair)

*Grant No: N00014-02-1-1033, Office of Naval Research - International Field Office, USA*

"INVERSE PROBLEMS: MODELING AND SIMULATION" (The International Conference, Fethiye Turkey) (May-June, 2004, Project Chair)

*TUBITAK, Turkey*

"INVERSE PROBLEMS RELATED TO HYPERBOLIC EQUATIONS" (02 May-29 May, 2005, Project Chair)

*TUBITAK, Turkey*

THE POPULATION MODEL AND PROJECTIONAL DATABASE FOR KOCAELI REGION ( 09/2003-09/2005, Project Chair)

*Kocaeli Governorship, Izmit, Turkey*

"NUMERICAL MODELING FOR DIFFERENTIAL EQUATIONS WITH MONOTONE OPERATORS (September 2006- September 2007, Project Chair)

*Research Fund of Kocaeli University*

"INVERSE PROBLEMS FOR ELLIPTIC, PARABOLIC DIFFERENTIAL EQUATIONS AND RELATED VARIATIONAL INEQUALITIES" (15 April-15 July, 2006, Project Chair)

*TUBITAK, Turkey*

"DEVELOPMENT OF A UNIFIED APPROACH AND SOFTWARE FOR NUMERICALLY SOLVING INVERSE AND OPTIMIZATION PROBLEMS FOR DISTRIBUTED SYSTEMS" (January 2007 - July 2009 (2 year), Project Coordinator)

*Grant No: Nr 06-1000017-8909, INTAS (The International Association formed by the European Community, for the Promotion of Co-operation with Scientists from the New Independent States of the Former Soviet Union)*

*INTAS, Brussels*

"MONOTONICITY OF INPUT-OUTPUT MAPPINGS IN INVERSE PROBLEMS"

(12 June, 2007 - 12 June, 2009, Project Chair)

*Research Fund of Kocaeli University*

"SOLUTION OF INVERSE PROBLEMS WITH NONLOCAL ADDITIONAL CONDITIONS FOR LINEAR/ NONLINEAR PARABOLIC EQUATIONS, AND APPLICATION TO WATER REMEDIATION/POLLUTION AND ION TRANSFER PROBLEMS" (October, 2008 - October, 2010, Project Chair)

*Grant No: 108T332, TUBITAK, Turkey*

"NATO NETWORKING INFRASTRUCTURE GRANT" (01/2009 - 01/2011), Science for Peace and Security Section, NATO, Brussels (Grant NIG 983659), Project Chair

#### **Awards and Honors**

-1969, 1970, Two-times Prize at Azerbaijan Mathematical School Olympiads, Baku

-1974, Participant of USSR Mathematical Student Olympiad, Moscow State University, Moscow (Chairman A. Kolmogorov)

-1983, Best Research Award, Baku State University, Azerbaijan

-1989, *Medal and Diploma of Honor* (with Academician K. Frolov, Prof. Y. Drozdov, Prof. A. Efimov)

USSR Academy of Science, Moscow, USSR (Exhibition of National Economical Achievement on "Fundamental Sciences in Technology" for the best scientific work "Computational Express-Nondestructive Diagnostics of

Constructional Medium" (Cert. no. 480-N, 02.08.89) for the year 1988)

-1993, *Certificate - Research and Development Project Management Program*, Battelle: Professional Development Center, USA

-1994, 1995, 1996, *Annual Best Research Award*, Kocaeli University, Turkey

-1998, *Teaching and Research Excellence Award*, Kocaeli University, Turkey

-1998, *Kocaeli Governorship Award*, Turkey

-2003, *American Medal of Honor*, American Biographical Institute

-2003, *Best Research Award*, Kocaeli University, Turkey

-2004, 2005, 2008 *Annual Best Research Award*, Kocaeli University, Turkey

-2008 *Honorary Professor of L.N. Gumilev Eurasian National University*, Astana, Kazakhstan -2010, *Award for Invited/Plenary Speakers*, Sattelite Conference of International Congress of Mathematicians, 15 - 18 August, 2010, New Delhi, India

-2011, *Research Excellence Award*, Izmir university, Turkey

### **Ph.D. Students**

1. Azer Mamedov "Numerical Solution of Direct and Inverse Problems for Bending Plate", Faculty of Computational Mathematics and Cybernetics, Moscow State University, Moscow, USSR, 1990.

2. Zahir Seyidmamedov "Numerical Solution of Elastoplastic Contact Problems", Institute of Cybernetics, Azerbaijan Academy of Sciences, Baku, Azerbaijan, 1991.

3. Mohamadi Abu El Fituh Mahmut "Numerical Solution of Direct and Inverse Problems for Orthotropic and Layered Bending Plates", Baku State University, Baku, Azerbaijan, 1991.

4. Yagub Mamedov "Qualitative Analysis of Elliptic Variational Inequalities", Faculty of Mathematics and Mechanics, Baku State University, Baku, Azerbaijan, 1992.

5. Serda Apak "Numerical Solution of Inverse Scattering Problem for Multilayered Media", Kocaeli University, Izmit - Kocaeli, Turkey, 1995.

6. Metin Bayrak "Comparitive Analysis of Finite Element and Finite Difference Methods on Boundary Value Problems Elliptic Type", Kocaeli University, Izmit - Kocaeli, Turkey, 1998.

7. Burhan Pektas "Inverse Coefficient Problems with Boundary Measured Data for the Sturm-Liouville Operator", Kocaeli University, Izmit - Kocaeli, Turkey, 2006.

8. Ebru Ozbilge "Numerical Solution of Elliptic Problems with Discontinuous Coefficients", Kocaeli University, Izmit - Kocaeli, Turkey, 2006.

9. Ali Demir "Bifurcation Equation Reduced by Lyapunov-Schmidt Method and Its Analysis", Kocaeli University, Izmit - Kocaeli, Turkey, 2007.

10. Turekhan Akhmedov, "Identification Problems Related to Nonlinear Ion Transport", Al-Farabi Kazakh National University, Almata - Kazakhstan, 2008.

11. Arzu Erdem "Monotonicity of Input-Output Mappings and Frechet Differentiability and Lipschitz Continuity of Cost Functionals in Inverse Problems for Parabolic Equations", Kocaeli University, Izmit - Kocaeli, Turkey, 2010.

12. Salih Tatar "Inverse Coefficient Problems with Nonlocal Additional Condition for Nonlinear Elliptic Equations Related to Torsional Rigidity of a Bar", Kocaeli University, Izmit - Kocaeli, Turkey, 2011.

13. Bakytzhan Akpayev, "Some Inverse Source and Identification Problems for Parabolic Equations", L.N. Gumilev Eurasian National University, Astana, Kazakhstan (under the international Ph.D. program, with Professor Muhtarbay Otelbaev <http://www.enu.kz/en/professors/prepodavатели/Otelbayev/index.php>), 2011.

14. Berik Toleuov, "Multiparameter Models in a Class of Economic Problems and Predictions", L.N. Gumilev Eurasian National University, Astana, Kazakhstan (under the international Ph.D. program, with Professor Muhtarbay Otelbaev), 2011.

### **Membership in Editorial Boards of International Journals**

Member of Board of Scientific Advisors, *Inverse Problems in Science and Engineering* (2010 - ) Member of Editorial Board, *Journal of Inverse and Ill-Posed Problems* (2005 - )

Associate Editor, *Inverse Problems in Science and Engineering* (2007 - 2010)

Associate Editor, *Applicable Analysis* (2008 - 2011)

Member of Editorial Board, *Hacettepe Journal of Mathematics and Statistics* (2008 - )

### **Memberships in International Societies and Scientific Committees**

-Nominator, Japan Prize, The Science and Technology Foundation of Japan (Since 2001),

Kamiyacho Mori Building, 4th Floor 3-20, Toramnon 4-chome, Minato-ku, Tokyo, 105-0001 JAPAN

-Member of Society for Industrial and Applied Mathematics (SIAM), (Since 1998),

- Member of American Mathematical Society (Since 1998),  
P.O.Box 6248, Providence, RI 02940-6248 USA
- Member of International Federation of Nonlinear Analysts (IFNA) (Since 1999)  
IFNA, Florida Institute of Technology, Dept. of Mathematical Sciences,  
Melbourne, FL 32901, USA
- Member of the Steering Committee of the International Society "Inverse Problems in Science and Engineering"  
(Since 2008)
- Member of Azerbaijan Mathematical Society (Since 1993),  
Baky, Baky State University, Azerbaijan
- Member of "Discrete, Experimental and Applied Mathematics" Area of Strength, Faculty of Art and Sciences  
(Since 1998), University of Nebraska, Lincoln-U.S.A.
- Special Coordination Committee of Kocaeli State Administration on Environmental Problems (1993-1996)
- Scientific Committee on Mathematical Modeling at the Academy of Sciences USSR (1989-1991)
- Scientific Committee on Contact Problems in Mechanics at the Academy of Sciences USSR (1986-1989)
- Special Scientific Committee on PhD dissertations at the Academy of Sciences Azerbaijan S.S.R (1989-1992)
- Scientific Committee of Young Scientists of Moscow State University (1980-1982)
- Scientific Committee of Young Scientists of Baku State University, Chair (1988-1990)

#### **Invited Adresses**

- Keynote speaker, 4th Inverse Problems, Design and Optimization Symposium (IPDO-2013), June 26-28,  
2013, Albi, France - Invited lecturer, International Conference "Inverse and Ill-Posed Problems of Mathemat-  
ical Physics" (dedicated to the 80th anniversary of the birthday of Academician M.M. Lavrentev),  
August 5-12, 2012, Novosibirsk, Russia - Invited lecturer, 11th Workshop on Dynamical Systems and  
Applications, Cankaya University, Ankara, Turkey, June, 2012
- Invited lecturer, Gent University, Belgium, January, 2012
- Plenary speaker, The Sixth International Conference "Algorithmic Analysis of Unstable Problems",  
October 31 -November 05, 2011 Ekaterinburg, Russia
- Plenary speaker, Sattelite Conference of International Congress of Mathematicians 2010 (ICM 2010),  
August 15 - 17, New Delhi, India
- Plenary speaker, Third Congress of the Turkish World Mathematicians, June 30 - July 04, 2009,  
Almaty, Kazakhstan
- Invited speaker, Izmir University, Turkey, December, 2008
- Plenary speaker, Euro-Asian National (Gumilev) University, Astana, September, 2008
- Invited speaker, Al-Farabi Kazakhstan National University, Almata, June, 2007
- Invited speaker, Workshop INTAS - South-Caucasus 2007: Scientific Cooperation and Collaborative  
Call, 29 March 2007, Tbilisi-Georgia
- Keynote speaker, Asian Simulation Conference, Meiji University, Tokyo, Japan, October 31, 2006
- Invited speaker, Al-Farabi Kazakhstan National University, Almata, September, 2006
- Invited speaker, Department of Optimization, Faculty of Applied Mathematics,  
Baku State University, Baku, Azerbaijan, June, 2003
- Invited speaker, Koc University, Turkey, October, 2000
- Invited speaker, University of Catania, Italy, July 23-24, 2000
- Invited speaker, Dokuz Eylul University, Izmir, Turkey, October 1999
- Colloquium speaker, Rostov State University, Rostov, Russia, May 1999
- Invited speaker, University of Nebraska, Lincoln, NE, February 1999
- Colloquium speaker, Moscow State University, Moscow, Russia, February 1999
- Colloquium speaker, Arcelik, Research and Developmant Center, Istanbul, Turkey, June 1997
- Colloquium speaker, Department of Engineering Sciences, Middle East Technical University, Ankara,  
Turkey, December, 1997
- Colloquium speaker, University of Nebraska, Lincoln, NE, April 1997
- Colloquium speaker, Colorado State University, Fort Collins, Colorado, May 1996
- Invited speaker, Marmara Research Centre, Gebze, Turkey, January 1992
- Invited speaker, National Mathematics Symposium, Gazimaguza, Turkey, September 1993
- Invited speaker, IFAC WORKSHOP "ACQP", Istanbul, Turkey, June 1993

- Invited speaker, Int. IMACS Conference, Moscow-Vilnius, June 1990
- Invited speaker, Computational Centre of Moscow State University, May 1988
- Invited speaker, Institute of Engineering Problems, Ukrainean Academy of Sciences, September 1988
- Invited speaker at the Seminar on Differential Equations, Institute of Mathematics and Informatics, Lithuanian Academy of Sciences Vilnus, November 1988
- Invited speaker, International Conferense on Mathematical Problems in Mechanics, Moscow, April 1986
- Invited speaker at the Applied Mathematics Seminar, Kharkhov Technology Institute, Ukrayna, June 1985

## PUBLICATIONS

### Articles in International Scientific Journals with Referee Practice

1. Numerical method for solving a contact problem of elasticity theory in the absence of friction forces, *Differentsialnye-Uravneniya* [Differentsialnye-Uravneniya] 18(1982), no.7, 1156-1161, 1284. MR: 84g: 73052.
2. On the numerical solution of a contact problem of elasticity theory with an unknown contact zone in the presence of complete adhesion, *Akad.-Nauk-Azerbaidzhan.-SSR-Dokl.* [Akademiya-Nauk-Azerbaidzhanskoi-SSR-Doklady] 38 (1982), no.7, 3-7. MR: 84b:65112.
3. On the solution of some contact problems with two stamps, *Akad. - Nauk - SSSR - Inst. - Prikl. - Mat. - Preprint* [Akademiya-Nauk-SSSR. -Institut-Prikladnoi-Matematiki.-Preprint], no.47, 19 (1982) MR: 83j: 73050.
4. Properties of normal stresses and displacements near a perturbed boundary of the contact zone, *Differentsialnye-Uravneniya* [Differentsialnye-Uravneniya] 19 (1983), no.7, 1181-1186 . MR: 85a: 73085.
5. Approximation of variational inequalities in an infinite-dimensional space, *Dokl.-Akad.-Nauk-SSSR*] 285 (1985), no.1, 20-23. MR: 86m: 49016.
6. Application of the elimination method in the solution of strongly elliptic systems by the finite element method, *Zh.-Vychisl.-Mat.-i-Mat.-Fiz.* [Akademiya-Nauk-SSSR.- Zhurnal-Vychislitelnoi-Matematiki-i-Matematicheskoi-Fiziki] 26(1986), no.6, 837-850, 958. MR: 87i: 65173.
7. An inverse problem for reconstruction of elastoplastic properties on the basis of an indentation diagram, *Differentsialnye-Uravneniya* [Differentsialnye-Uravneniya] 22 (1986), no.7, 1260-1263, 1288. MR: 87k: 73020.
8. Solution of an axisymmetric contact problem of elasticity by the finite element method, *Vestnik - Moskov. - Univ. - Ser. - XV - Vychisl. - Mat. -Kibernet.* [Vestnik-Moskovskogo-Universiteta.-Seriya-XV.-Vychislitelnaya- Matematika-i-Kibernetika] 1987, no.4, 11-16, 72. MR: 88m: 65192.
9. (with A. Efimov) Local Adaptable Mesh Method for Numerical Solution of Elastoplastic Contact Problems, *Izvestiya Acad. Nauk USSR, MTT*, Vol.6, pp:105-112, (1988).
10. Mathematical principles of the nondestructive diagnostics of an elastoplastic medium (theory and computational experiment), *Akad.-Nauk-SSSR-Inst.-Prikl.-Mat.-Preprint* [Akademiya-Nauk-SSSR-Institut- Prikladnoi-Matematiki-Preprint] 1988, no.36, 28 pp. MR:89f: 73028.
11. (with Y. Drozdov, A.Efimov) Mathematical simulation of contact interaction in a cylindrical sliding bearing, *Soviet Journal of Friction and Wear*, Vol.9, No.2, pp:223-230, (1988).
12. An inverse problem of nondestructive diagnostics of an elastoplastic medium, *Dokl.-Akad.-Nauk-SSSR* [Doklady-Akademii-Nauk-SSSR] 298 (1988), no.6, 1299-1303. MR: 89c: 73029.
13. (with A.Mamedov) Some properties of the solution of the Signorini problem under perturbation

of an unknown boundary, Original: Vestnik-Moskov-Univ.-Ser.-XV-Vychisl.-Mat.-Kibernet. [Vestnik-Moskovskogo-Universiteta.-Seriya-XV.-Vychislitel'naya-Matematika-i- Kibernetika] 1989, no.3, 64-66. MR: 90k: 73080.

**14.** (with Y. Drozdov, A. Efimov) On Mathematical Modeling of Contact Problems in Cylindrical Support Rolling with Temperature Forces, *Soviet Journal of Friction and Wear*, Vol.10, No.3, pp:12-16, (1989) (in Russian, trans. in English).

**15.** (with A. Efimov, M. Hapaev) On Numerical Solution of Inpenetration Contact Problem Elasticity, *Izvestiya Acad. Nauk USSR, MTT*, Vol.3, pp:12-17, (1989).

**16.** Computational diagnostics for determining properties of construction materials, Mat.-Model. [Matematicheskoe-Modelirovanie] 1(1989), no.6, 1-32. MR: 90m: 73004 .

**17.** (with V. Lokshin) Computational diagnostics of an ortotropic medium, *Matematicheskoe Modelirovaniye*, Vol.2, No.12, pp:12-21(1990).

**18.** (with A. Fatullaev) Mathematical modeling in lazer-metal processes, *Matematicheskoe Modelirovaniye*, Vol.3, No.1, pp:18-24, (1991) (in Russian, trans. in English).

**19.** (with A. Mamedov) An Inverse Problem Related to the Determination of Elastoplastic Properties of a Plate, *Inverse Problems*, **10** (1994) pp. 601-615.

**20.** An Inverse Coefficient Problem for an Elasto-Plastic Medium, *SIAM J. Appl. Math.*, **55**(1995), pp.1736-1752 .

**21.** (with Z. Seyidmamedov) The Solution of an Axisymmetric Inverse Elasto-Plastic Problem Using Penetration Diagram, *International Journal of Non-Linear Mechanics*, **30**(1995), pp. 465-477.

**22.** Inverse coefficient problems for monotone potential operators, *Inverse Problems*, **13**(1997), pp. 1265-1278.

**23.** Coefficient stability and existence of a quasisolution of inverse parabolic problem, *Applicable Analysis*, **67**(1997), pp. 1-9.

**24.** (with T.S. Shores) Solution of an inverse coefficient problem for an ordinary differential equation, *Applicable Analysis*, **67**(1997), pp. 11-20.

**25.** (with Z. Seyidmamedov ) Determination of unknown elastoplastic properties in Signorini problem, *International Journal of Nonlinear Mechanics*, **34**(1998), pp. 979-991.

**26.** Properties of Signorini's problem solution with perturbation of unknown boundary and application to contact problems, *Applicable Analysis* **68** (1998), pp. 357-381.

**27.** Variational approach to a nonlocal identification problem related to nonlinear ion transport, *Mathematical Methods in the Applied Sciences* **21** (1998), pp. 1195-1206.

**28.** Strong coefficient stability for quasilinear elliptic equations with application to inverse coefficient problems, *Applicable Analysis* **68** (1998), pp. 313-331.

**29.** Inverse coefficient problems for elliptic variational inequalities with a nonlinear monotone operator, *Inverse Problems* **14** (1998), pp. 1151-1169.

**30.** Qualitative behaviour of solutions of unilateral elliptic problems with perturbing the unknown boundary. I. The Theory, *Applied Mathematics and Computation*, **109** (2000), pp. 249-260.

**31.** (with Z. Seyidmamedov) Qualitative behaviour of solutions of Signorini problem with perturbing the unknown boundary. II. The multigrid method, *Applied Mathematics and Computation*, **109** (2000), pp. 261-271.

**32.** (with J. Mueller, S Cohn and J Redepinning) Numerical solution of a nonlocal identification problem related to nonlinear ion transport, *Computers & Mathematics with Applications*, **39** (2000), pp. 225-235.

- 33.** Convexity argument for monotone potential operators and its application, *Nonlinear Analysis: Theory, Method & Applications*, **41/7-8** (2000), pp. 907-919.
- 34.** (with J. Mueller) A numerical method for backward parabolic problems with non-selfadjoint elliptic operator, *Applied Numerical Mathematics*, **37/1-2**(2001), pp. 55-78.
- 35.** (with Z. Seyidmamedov) Determination of leading coefficients in Sturm-Liouville operator from boundary measurements. I. A stripping algorithm, *Applied Mathematics and Computation*, **125** (2002), pp.1-21.
- 36.** (with Z. Seyidmamedov) Determination of leading coefficients in Sturm-Liouville operator from boundary measurements. II. Unicity and an engineering approach, *Applied Mathematics and Computation*, **125** (2002), pp. 23-34.
- 37.** (with B. Pektas) Simulation of ill-conditioned situations in the inverse coefficient problem for the Sturm-Liouville operator based on boundary measurements, *Mathematics and Computers in Simulation*, **61(1)** (2002), pp. 1-6.
- 38.** An inverse polynomial method for the identification of the leading coefficient in the Sturm-Liouville operator from boundary measurements, *Applied Mathematics and Computation*, **140** (2003), pp.501-515.
- 39.** Integral convexity argument for plasticity function and monotonicity of iteration process for elasto-plastic problems, *International Journal of Nonlinear Mechanics*, **39**(2004), pp. 1217-26.
- 40.** Error analysis of a multisingular inverse coefficient problem for the Sturm-Liouville operator based on boundary measurement, *Applied Mathematics and Computation*, **150**(2004), pp. 493-524.
- 41.** Determination of the leading coefficient in the monotone potential Sturm-Liouville operator from boundary measurements, *Applied Mathematics and Computation*, **152**(2004), pp. 141-162.
- 42.** On existence, uniqueness and convergence of approximate solution of boundary value problems related to nonlinear operator  $Au := -(k((u')^2))' + g(u)$ , *Applied Mathematics and Computation*, **153**(2004), pp. 659-672.
- 43.** (with A. Demir, N.S. Namachchivaya) Delay equations with fluctuating delay related to the regenerative chatter I: Reduced bifurcation equation, *Applicable Analysis*, **84(5)**(2005), pp. 437-449.
- 44.** (with A. Demir, N.S. Namachchivaya) Delay equations with fluctuating delay related to the regenerative chatter II: Analysis of the reduced bifurcation equation, *Applicable Analysis*, **84(6)**(2005), pp. 631-647.
- 45.** (with A. Demir, N.S. Namachchivaya) Delay equations with fluctuating delay related to the regenerative chatter, *International Journal of Nonlinear Mechanics*, **41**(2006), pp.464-474.
- 46.** (with P. DuChateau, B. Pektas) An adjoint problem approach and coarse-fine mesh method for identification of the diffusion coefficient in a linear parabolic equation, *Journal of Inverse and Ill-Posed Problems*, **14(5)**(2006), pp.435-463.
- 47.** Monotonicity of non-linear boundary value problems related to deformation theory of plasticity, *Mathematical Problems in Engineering*, vol. 2006(2006), pp.1-18 (Article ID 58143).
- 48.** (with Z. Seyidmamedov Muradoglu) A finite element analysis and remeshing algorithm for an axisymmetric elasto-plastic contact problem related to indentation measurements, *Materials & Design* **28**(2007), pp.62-70.
- 49.** Simultaneous determination of source terms in a linear parabolic problem from the final over-determination: weak solution approach, *J. Math. Anal. Appl.*, **330**(2007), pp. 766-779.
- 50.** (with A. Demir, A. Erdem) Monotonicity of input-output mappings in inverse coefficient and source problems for parabolic equations, *J. Math. Anal. Appl.*, **335**(2007), pp. 1434-1451.



51. Variational approach to nonlinear boundary value problems for elasto-plastic incompressible bending plate *Int. J. Non-Linear Mechanics*, **42(5)**(2007), pp. 711-721.
52. An inversion method for identification of elastoplastic properties for engineering materials from limited spherical indentation measurements, *Inverse Problems in Science and Engineering*, **15(6)**(2007), pp. 601-627.
53. (with Ş. Hasanoglu) Relationship between current response and time in ion transport problem including diffusion and convection. 1. An analytical approach, *Journal of Mathematical Chemistry*, **42(4)**(2007), pp. 741-751.
54. (with A. Demir) Identification of the unknown diffusion coefficient in a linear parabolic equation by the semigroup approach, *J. Math. Anal. Appl.*, **340(1)**(2008), pp. 5-15.
55. (with Zhenhai Liu) An inverse coefficient problem for a nonlinear parabolic variational inequality, *Applied Mathematics Letters*, **21(6)** (2008), pp. 563-570.
56. (with Ş. Hasanoglu) Analytical formulae and comparative analysis for linear models in chronoamperometry under conditions of diffusion and migration, *Journal of Mathematical Chemistry*, **44(1)**(2008), 133-141.
57. (with D. Lesnic) Determination of the leading coefficient in fourth-order Sturm-Liouville operator from boundary measurements, *Inverse Problems in Science and Engineering*, **16** (2008), 413 - 424 .
58. (with Cenk Sen) Comparative geometric analysis of diamond and hole techniques in end-to-side microvascular anastomosis, *Microsurgery*, **28** (2008) 262-264.
59. (with Ş. Hasanoglu) Comparative analysis of linear and nonlinear models for ion transport problem in chronoamperometry, *Journal of Mathematical Chemistry*, **44** (2008) 731-742.
60. (with Yun Hua Ou, Zhenhai Liu) An inverse coefficient problems for nonlinear parabolic differential equations, *Acta Mathematica Sinica*, **24(10)** (2008), pp. 1617-1624.
61. (with S.I. Kabanikhin, A.V. Penenko), A gradient descent method for solving an inverse coefficient heat conduction problem, *Russian Journal of Numerical Analysis and Applications*, **1/1** (2008), 34-45
62. (with A. Erdem) Determination of unknown coefficient in a nonlinear elliptic problem related to the elasto-plastic torsion of a bar, *IMA J. Appl. Math.*, **73(4)** (2008), pp. 579-591
63. Simultaneous determination of source terms in a linear hyperbolic problem from the final overdetermination: weak solution approach, *IMA J. Appl. Math.*, **74** (2009), pp. 1-19.
64. (with S. Tatar) Solution of linear and nonlinear problems related to torsional rigidity of a beam, *Computational Materials Sciences*, **45** (2009), pp.494-498.
65. (with B. Pektaş, Ş. Hasanoglu) An analysis of nonlinear ion transport model including diffusion and migration, *Journal of Mathematical Chemistry*, **46(4)** (2009), pp. 1188 -1202.
66. Identification of unknown source term in a vibrating cantilevered beam from final overdeterminations, *Inverse Problems*, **25** (2009) 115015 (19pp).
67. (with S. Tatar) Semi-analytic inversion method for determination of elastoplastic properties of power hardening materials from limited torsional experiment, *Inverse Problems in Science and Engineering*, **18**(2010), pp. 265-278.
68. (with S. Tatar), An inversion method for identification of elastoplastic properties of a beam from torsional experiment, *Int. J. Non-Linear Mech.* **45** (2010), pp. 562-571.
69. (with B. Pektaş, U. Kadiroglu) An analysis of nonlinear ion transport problem including arbitrary valences of oxidized and reduced species, *Journal of Mathematical Chemistry*, **47(4)** (2010), pp. 1248-1262.
70. Identification of unknown diffusion and convection coefficients in ion transport problems from

- flux data. An analytical approach, *Journal of Mathematical Chemistry*, 48(2) (2010), pp. 413 - 423.
- 71.** Identification of unknown diffusion coefficient in pure diffusive linear model of chronoamperometry. I. The theory, *Journal of Mathematical Chemistry*, 48 (2010) pp. 491 - 507.
- 72.** (with B. Pektaş) Identification of unknown diffusion coefficient in pure diffusive linear model of chronoamperometry. II. Numerical Implementation, *Journal of Mathematical Chemistry*, 48 (2010) pp. 508 - 520.
- 73.** Nonlinear monotone potential operators: from nonlinear ODE and PDE to computational material sciences, *Advances in Dynamical Systems and Applications (ADSA)*, 5(2)(2010), pp. 173-190
- 74.** (with M. Otelbaev, B. Akpayev) Control problem with a point source of heat used as a controller, *Doklady Mathematics*, 82(3) (2010), pp. 1 - 3.
- 75.** An inverse coefficient problem for nonlinear biharmonic equation with surface measured data, *Eurasian Mathematical Journal*, 1(3)(2010), pp. 43-57.
- 76.** An inverse source problem with single Dirichlet type measured output data for a linear parabolic equation, *Applied Mathematics Letters*, 24(2011), pp. 1269-1273.
- 77.** Some new classes of inverse coefficient problems in nonlinear mechanics and computational material science, *Int. J. Non-Linear Mechanics*, 46(5)(2011), pp. 667-684.
- 78.** (with B. Pektaş, A. Erdem) Comparative analysis of inverse coefficient problems for parabolic equations. Part I. Adjoint problem approach, *Inverse Problems in Science and Engineering*, 19 (5) (2011), pp. 599-615.
- 79.** (with B. Pektaş) Comparative analysis of inverse coefficient problems for parabolic equations. Part II. Coarse-fine grid algorithm, *Inverse Problems in Science and Engineering*, 19(5) (2011), pp. 617-632.
- 80.** (with B. Pektaş) Comparative analysis of inverse coefficient problems for parabolic equations. Part III. Conjugate Gradient Method and Coarse-fine grid algorithm, *Inverse Problems in Science and Engineering*, 19 (5) (2011), pp. 633-657.
- 81.** (with M. Otelbaev, B. Akpayev) Inverse heat conduction problems with boundary and final time measured output data, *Inverse Problems in Science and Engineering*, 19(7) (2011), pp. 895-1006.
- 82.** Biography Michael V. Klibanov Professor, Ph.D. and Doctor of Science in Physics and Mathematics an outstanding expert in inverse problems, *Applicable Analysis*, 90(10)(2011), pp. 1453-1459.
- 83.** Identification of spacewise and time dependent source terms in 1D heat conduction equation from temperature measurement at a final time, *International Journal of Heat and Mass Transfer*, 55 (2012), pp. 2069-2080.
- 84.** (with Z. Seyidmamedov Muradoglu) Fast inversion algorithm for identification of elastoplastic properties of power hardening materials from limited spherical indentation tests, *International Journal of Non-Linear Mechanics*, 47 (2012), pp. 526-536.
- 85.** (with M. Otelbaev, B. Akpayev) A source identification problem related to mathematical model of laser surface heating, *Applied Mathematics Letters*, 25(2012), pp. 1480-1485.
- 86.** (with M. Slodička) An analysis of inverse source problems with final time measured output data for the heat conduction equation: A semigroup approach, *Applied Mathematics Letters*, 26(2)(2013), pp. 207-214.
- 87.** (with B. Pektaş) Identification of an unknown time-dependent heat source term from overspecified Dirichlet boundary data by conjugate gradient method, *Computers & Mathematics with Applications*, 65(1)(2013), pp. 42-57.
- 88.** (with V.G. Romanov) An inverse coefficient problem related to elastic-plastic torsion of a circular

cross-section bar, *Applied Mathematics Letters*, 26(2013), pp. 533-538.

### Books and Lecture Notes

1. *First Course of Finite Element Method* (Lecture Notes), Moscow State Univ., 1984(in Russian).
2. *Elliptic Variational Inequalities* (Lecture Notes), Baku State Univ., 1989(in Russian).
3. *Database and Operative Control System of Environmental Processes Related to Industrial Pollution (for Kocaeli Region)*, Kocaeli University, Kocaeli-Izmit, 1995 (in Turkish).
4. *High Mathematics 1: Analysis of Multivariable Functions*, (with H. Halilov and M Can), Literatur, Istanbul (1999) ISBN: 975-8431-08-0) (in Turkish).
5. *High Mathematics 2: Analysis of Multivariable Functions*, (with H. Halilov and M Can), Literatur, Istanbul (2001) (ISBN: 975-8431-09-9) (in Turkish).
6. *Variational Problems and Finite Element Method*, Literatur, Istanbul (2001) (ISBN: 975-8431-33-1) (in Turkish).
7. *High Mathematics 1: Analysis of Multivariable Functions*, (with H. Halilov and M Can), 2nd revised edition, Literatur, Istanbul (2001)(ISBN: 975-8431-08-0) (in Turkish).
8. *Partial Differential Equations*, Literatur, Istanbul (2010)(ISBN: 975-975-04-0557-0) (in Turkish).

### Book/Series Chapters

- Alemdar Hasanov, Some new classes of inverse coefficient problems in nonlinear mechanics and computational material science, Chapter 12, In Book: *Mathematics in Science and Technology: Mathematical Methods, Models and Algorithms in Science and Technology* (Proceedings of the Satellite Conference of the International Congress of Mathematicians (ICM)), Eds.: A.H. Siddiqi, R.C. Singh, P. Manchanda, World Scientific, New Jersey, 2011.
- Daniel Lesnic, Alemdar Hasanov, Determination of the leading coefficient in fourth-order Sturm-Liouville operator from boundary measurements, In Book: *Inverse Problems: Design and Optimization*, Vol.1, Miami, Florida, pp: 9-14, (2007)
- Alemdar Hasanov, Computational material diagnostics based on limited boundary measurements: An inversion method for identification of elastoplastic properties from indentation measurements, In Book: *System Modeling and Simulation: Theory and Applications*, Asian Simulation Conference 2006, Springer, Tokyo, pp: 11-15, (2006)
- Alemdar Hasanov, Paul DuChateau, Parabolic inverse coefficient problems: An analysis of adjoint problem approach and applications, In Book: *Tikhonov and Contemporary Mathematics*, Moscow State University, Moscow, pp: 45-46, (2006)
- Gasanov, A. I. (Alemdar Hasanov), Computational Diagnostics of Constructional Medium, In Book: *Mathematical Modeling and Applied Mathematics*, Elsevier Science Publishers B.V., North-Holland, pp: 233-243, (1992)
- Gasanov, A. I. (Alemdar Hasanov), On Some Optimization Problems in Nondestructive Diagnostics, In Book: *Fundamental Investigations and Mathematical Modeling in Technology*, pp:63-67, Baku, (1988) (in Russian)
- Gasanov, A. I., Seyidmamedov Z., On Numerical Methods for Solving of Nonlinear Contact Problems by using Software SOLVO3, In Book: *Numerical Methods for Operator Equations*, Baku State University, pp:24-34, (1986) (in Russian)
- Gasanov, A. I. (Alemdar Hasanov), Mathematical Foundations of Nondestructive Diagnostics Methods for Determination of Mechanical Properties of an Elastoplastic Materials. In book: *Problems of Deformable Body Mechanics*, pp:90-96, Gorki, USSR, (1986) (in Russian)
- Gasanov, A. I. (Alemdar Hasanov), Efimov A., On local Adaptable Mesh Method for Solving Variational Inequalities in Elasticity and Plasticity, In Book: *Applied Problems in Plasticity*, Vol.31, pp:32-39, (1986) (in Russian)

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- Gasanov, A. I. (Alemdar Hasanov), Approximation of variational inequalities in an infinite-dimensional space, *Approximate methods for solving operator equations*, 32-39, 124, Azerbaijan. Gos. Univ., Baku, 1985, MR0862979 (in Russian)
- Gasanov, A. I. (Alemdar Hasanov), Gasanov, N. B. Mathematical models of the determination of the mutual effect of microcontacts, *Approximate methods for solving operator equations* , 40-48, 124, Azerbaijan. Gos. Univ., Baku, 1985, MR0862980 (87k:73051) (in Russian)
- Gasanov, A. I. (Alemdar Hasanov), The finite element method in problems of mechanics of a solid deformable body with unknown boundary, In Book: *Approximate methods for operator equations*, 29-35, Azerbaijan. Gos. Univ., Baku, 1983, MR0757373 (85g:73031) (in Russian)

### International Conferences

1. An inverse problem in diagnostics of constructional elastoplastic medium, *Int. Congress of Mathematics*, Kyoto, Japan, 21-29 August, 1990.
2. A Computational diagnostics of elastoplastic medium, *Int. IMACS Conference*, Moscow-Vilnius, 18-23 June, 1990
3. On computational diagnostics of constructional medium, *IFAC Workshop "ACQP"* , Istanbul, Turkey, 3-5 June, 1992.
4. Computational aspects of an inverse diagnostic problem for an elastoplastic medium *3rd World Congress on Computational Mechanics, Vol. 2-G10-3, 1994, pp.982-983*, August 1-15, 1994 Chiba, Japan.
5. Variational approach and numerical solution of two dimensional inverse scattering problem for non-homogeneous medium *WCCM III The Third World Congress on Computational Mechanics*, August 1-15, 1994 Chiba, Japan.
6. Inverse scattering problem for nonhomogeneous medium with an approximate boundary condition, *International Workshop on Direct and Inverse Electromagnetic Scattering*, September 24-30, 1995 TUBITAK, Marmara Research Center, Gebze - Turkey
7. (with J. Mueller) A Numerical method for backward parabolic problems With non-selfadjoint operators, *SIAM Annual Meeting*, University of Toronto, Canada, July 13-17, 1998.
8. (with J. Mueller) A forward collocation method for the backward parabolic equations, *Int. Workshop on Nonlinear and Improperly Posed Problems*, Kocaeli University, Izmit-Turkey, August 17-22, 1998.
9. Inverse coefficient problems for monotone potential operators, *Int. Workshop on Nonlinear and Improperly Posed Problems*, Kocaeli University, Izmit-Turkey, August 17-22, 1998.
10. (with J. Mueller) Numerical solution of the backward parabolic problems with non-selfadjoint operators, *Int. Conference on Actual Problems of Applied Mathematics and Mathematical Modeling*, Moscow State University, Moscow, Russia, February 19-22, 1999.
11. (with J. Mueller) An analysis of modified Peaceman- Rachford scheme for the non-selfadjoint parabolic problems, *Int. Conference on Environmental Mathematical Modeling and Numerical Analysis (EMMNA '99)*, Rostov State University, Rostov, Russia, May 24-31, 1999.
12. Convexity argument for nonlinear monotone potential operators and convergence of iteration method for nonlinear boundary Value Problems, *The Third World Congress of Nonlinear Analysts*, July 19-26, 2000, Catania, Italy.
13. Computational material diagnostics in elastoplasticity based on limited indentation tests, *The*

*First Int. Conference on Nonlinear Analysis and Nonlinear Modeling*, July 17-23, 2001, Fethiye, Turkey

14. Computational material diagnostics based on limited measured data, *The First Int. Conference "Inverse Problems: Modeling and Simulation"*, July 14-21, 2002, Fethiye, Turkey

15. (with B. Pektas) An inverse polynomial method for the identification of the leading coefficient in the Sturm-Liouville operator from boundary measurements. Noise analysis, *The First Int. Conference "Inverse Problems: Modeling and Simulation"*, July 14-21, 2002, Fethiye, Turkey

16. Inverse coefficient problems for monotone potential operators, *Int. Conference "Inverse and Ill-Posed Problems"*, August 5-12, 2002, Novosibirsk, Russia

17. A multisingular inverse coefficient problem for the Sturm-Liouville operator based on boundary measured data, *Int. Conference "Computational Methods in Applied Mathematics: CMAM-1"*, July 20-24, 2003, Minsk, Belarus

18. Nonlocal Identification Problem for Estimation of Sludge Concentration in a Settler, *Int. Conference "Computational Methods in Applied Mathematics: CMAM-1"*, October 8-12, 2003, Novosibirsk, Russia

19. Inverse coefficient problems for monotone potential operators and elastoplastic indentation, *The Second Int. Conference "Inverse Problems: Modeling and Simulation"*, June 07-12, 2004, Fethiye, Turkey

20. (with Z. Seyidmamedov) State discretization step as a regularization parameter in inverse elastoplastic problems, *The Int. Conference "Inverse Problems: Modeling and Simulation"*, June 07-12, 2004, Fethiye, Turkey

21. An analysis of social structure of scientific communications between the Turkish World countries (1991-2005), *The First General Assembly of Sociologists of Turkish World Countries*, Kocaeli Metropolitan Municipality, November 25-27, 2005, Kocaeli-Izmit, Turkey

22. (with P. DuChateau, B. Pektas) Coefficient in linear parabolic problems based on boundary measured data: Adjoint problem approach and coarse-fine mesh algorithm, *The Third Int. Conference "Inverse Problems: Modeling and Simulation"*, May 29- June 02, 2006, Fethiye, Turkey

23. (with A. Demir) Semigroup approach for identification of the unknown diffusion coefficient in a linear parabolic equation, *The Third Int. Conference "Inverse Problems: Modeling and Simulation"*, May 29- June 02, 2006, Fethiye, Turkey

24. (with P. DuChateau) Parabolic inverse coefficient problems: An analysis of adjoint problem approach and applications, *The International Conference "Tikhonov and Contemporary Mathematics"*, June 19-25, 2006, Moscow, Russia

25. Computational material diagnostics based on limited boundary measurements: An inversion method for identification of elastoplastic properties from indentation, *Asian Simulation Conference*, October 30- November 01, 2006, Meiji University, Tokyo, Japan

26. Development of a unified approach and software for numerically solving inverse and optimization problems for distributed systems, *Workshop INTAS - South-Caucasus 2007: Scientific Cooperation and Collaborative Call*, March 28-30, 2007, Tbilisi, Georgia

27. Fréchet differentiability and Lipschitz continuity of cost functionals in parabolic and hyperbolic inverse problems: a unified approach, *6th International ISAAC Congress*, August 13-18, 2007, Middle East Technical University, Ankara, Turkey

28. (with S. Tatar) Determination of unknown coefficient in a nonlinear elliptic problem related to the elasto-plastic torsion of a bar, *6th International ISAAC Congress*, August 13-18, 2007, Middle East Technical University, Ankara, Turkey

- 29.** Mathematical modeling and simulation in medical sciences, *The Second International Congress of Central Asia Infectious Diseases*, March 27-30, 2008, Almaty, Kazakhstan
- 30.** (with Muradoglu Z., Hasanoglu S.) A nonlinear nonlocal identification problem related to ion transport, *The Fourth International Conference "Inverse Problems: Modeling and Simulation"*, May 26-30, 2008, Oludeniz-Fethiye, Turkey
- 31.** (with Erdem A.) Monotonicity of input-output mappings and Frechet differentiability and Lipschitz continuity of related auxiliary functionals in inverse coefficient problems related to parabolic equations, *The Fourth International Conference "Inverse Problems: Modeling and Simulation"*, May 26-30, 2008, Oludeniz-Fethiye, Turkey
- 32.** (with Tatar S.) A nonlocal identification problem related to determination of unknown parameters of a cylindrical bar from measured torque, *The Fourth International Conference "Inverse Problems: Modeling and Simulation"*, May 26-30, 2008, Oludeniz-Fethiye, Turkey
- 33.** (with Pektas B, Erdem A.) Numerical analysis of ill-posedness of parabolic coefficient identification problems, *International Conference "Algorithmic Analysis of Unstable Problems"* (Dedicated to the 100th anniversary of outstanding Russian mathematician V.K. Ivanov), September 01-06, 2008, Ekaterinburg, Russia, pp. 175-176
- 34.** (with Erdem A.) Monotonicity of input-output mappings and Lipschitz continuity of cost functionals in parabolic coefficient identification problems, *International Conference "Algorithmic Analysis of Unstable Problems"* (Dedicated to the 100th anniversary of outstanding Russian mathematician V.K. Ivanov), September 01-06, 2008, Ekaterinburg, Russia
- 35.** Simultaneous determination of source terms in linear/nonlinear parabolic and hyperbolic problems from the final overdeterminations: weak solution approach, *International Conference "Computational and Information Technologies in Science, Engineering and Education"*, September 10-14, 2008, Almaty, Kazakhstan
- 36.** Recent Advances in Theory and Applications of Inverse Problems for PDE, *III Congress of Turkish World Mathematicians*, June 30 - July 04, 2009, Almaty - Kazakhstan
- 37.** Lipschitz continuity of Frechet gradients of cost functionals related to inverse problems for parabolic and hyperbolic PDEs, *International Workshop "Inverse Problems: Developments in Theory and Applications"* Institute of Mathematics the Polish Academy of Sciences, Stefan Banach International Mathematical Center, Warsaw, February 9-12, 2010, Poland
- 38.** Identification of unknown source term in a vibrating cantilevered beam from final data overdetermination, *Fifth International Conference "Inverse Problems: Modeling and Simulation"*, May 24-29, 2010, Antalya, Turkey
- 40.** (with Otelbaev M.) Semigroup approach for identification of an unknown source term in a parabolic equation from final overdetermination, *Fifth International Conference "Inverse Problems: Modeling and Simulation"*, May 24-29, 2010, Antalya, Turkey
- 41.** (with Erdem A. and Pektas B.) Comparative numerical analysis of coarse-fine mesh and gradient methods in inverse coefficient problems for parabolic equations, *Fifth International Conference "Inverse Problems: Modeling and Simulation"*, May 24-29, 2010, Antalya, Turkey
- 42.** (with Tatar S.) An inversion method for identification of elastoplastic properties of a beam from torsional experiment, *Fifth International Conference "Inverse Problems: Modeling and Simulation"*, May 24-29, 2010, Antalya, Turkey
- 43.** An Introduction to Inverse Source and Coefficient Problems for PDEs Based on Boundary Measured Data, *Sattelite Conference of International Congress of Mathematicians 2010 (ICM 2010)*, August 15 - 17, New Delhi, India
- 44.** (with Kabanikhin S.I., Mikhailenko B.G., Karas A., Khidasheli D., Belonosov A.S., Marinin I.V.)

New Approaches to Earthquakes Prediction, Simulation and Visualization, *World Forum on Natural Cataclysms and Global Problems of the Modern Civilization: GEOCATACLYSM-2011*, September 19-21, 2011, Istanbul, Turkey

45. Some new inverse problems in non-linear mechanics and materials science, *The Sixth International Conference "Algorithmic Analysis of Unstable Problems"*, October 31 -November 05, 2011, Ekaterinburg, Russia

46. New inverse problems in computational material science and electrochemistry: monotonicity and nonlinear diffusion, *The 6th International Conference "Inverse Problems: Modeling and Simulation"*, May 21- 26, 2012, Antalya, Turkey

47. (with Pektas) Inverse source problems in heat transfer based on boundary measured data, *The 6th International Conference "Inverse Problems: Modeling and Simulation"*, May 21- 26, 2012, Antalya, Turkey

48. New coefficient identification problems with nonlocal measured output data arising in electrochemistry and water treatment, *International Conference "Inverse and Ill-Posed Problems of Mathematical Physics"* (dedicated to the 80th anniversary of the birthday of Academician M.M. Lavrentev), August 5-12, 2012, Novosibirsk, Russia

48. Inverse source problems related to vibrating cantilevered beam, based on boundary/final data measurements, *4th Inverse Problems, Design and Optimization Symposium (IPDO-2013)*, Albi, France, June 26-28, 2013

#### USSR Conferences

1. On Two Mathematical Models in Rolling Contact Problems, *I-th Soviet Union Conference "Moscow Univ. Science in Technology"*, Moscow, 11-16 September (1980).

2. (with A. Efimov and O. Kochin) On Mathematical Models To Define The Hardness of Metals, *Scientific Conference in Technology*, Baku, 13-17 May, (1984).

3. (with I. Kapurin) The Finite Element Method for Elliptic System of Elasticity, *Scientific Conference of Technology*, Baku, 13-17 May, (1984).

4. (with A. Efimov) On Local Adaptable Net Method in Contact Problems of Elasticity and Plasticity, *III-th Soviet Union Conference of Boundary Problems in Solid Deformable Mechanics*, Kharkow, 10-13 June, (1985).

5. Mathematical Modeling and Numerical Foundation of Nondestructive Diagnostics of an Elastoplastic Medium, *VI-th Soviet Union Symposium of Theoretical and Applied Mechanics*, Tashkent, 17-23 June, (1986).

6. (with A. Efimov and Y. Drozdov) On Mathematical Modeling of Contact Problems in Cylindrical Support Rolling with Temperature Forces, *Conference USSR Academy of Sciences on "Developments in Theory of Contact Problems"*, Lutck, 17-22 June, (1988).

7. On Direct and Inverse Contact Problems, *IV-th National Conference on "Boundary Value Problems in Deformable Body"*, Odessa, 10-13 September, (1989).

8. Computational Express-Diagnostics in Costructional Medium, *Conference USSR Academy of Science on "Fundamental Sciences in Technology"*, Moscow 3-7 October, (1989).

9. Mathematical Foundation of Diagnostics for Ortotropic medium, *VII-th Soviet Union Conference on "Polimer and Composite Mechanics"*, Riga, 17-20 April, (1990).

#### Books/Journals Edited

1. *Nonlinear and Improperly Posed Problems*, A.A. Samarskii and A. Hasanoglu (Hasanov) Eds., (Proceedings of the Int. Workshop on Nonlinear and Improperly Posed Problems, August 17th - 23th, 1998, Kocaeli Turkey), Kocaeli University, 1998 (Kocaeli University, 1998, ISBN: 975-8047-00-0)

2. *Nonlinear Analysis and Nonlinear Modeling*, V. Lakshmikantham and A. Hasanoglu (Hasanov) Eds., Proceedings of the Int. (IFNA) Conference on Nonlinear Analysis and Nonlinear Modeling, July

- 17th - 23th, 2001, Fethiye, Turkey (Kocaeli University, 2001, ISBN: 975-8047-03-5)
3. *Abstracts of the First International Conference "Inverse Problems: Modeling and Simulation"*, S. Cohn, A. Hasanoglu (Hasanov), S. Kabanikhin, A. Tolstoy Eds., Abstracts of the First International Conference "Inverse Problems: Modeling and Simulation", July, 14 - 21, 2002, Fethiye, Turkey (Kocaeli University, 2002, ISBN: 975-8047-12-4)
  4. *Abstracts of the First International Conference "Inverse Problems: Modeling and Simulation"*, H.T. Banks, A. Hasanoglu (Hasanov), S.I. Kabanikhin, Eds., Abstracts of the International Conference "Inverse Problems: Modeling and Simulation", June 07th-12th, 2004, Fethiye, Turkey (Kocaeli University, 2004, ISBN: 975-8047-37-X)
  5. *Abstracts of the Third International Conference "Inverse Problems: Modeling and Simulation"*, H.T. Banks, A. Hasanoglu (Hasanov), S.I. Kabanikhin, Eds., Abstracts of the Third International Conference "Inverse Problems: Modeling and Simulation", May 29th - June 02th, 2006, Fethiye, Turkey (Literatr, Istanbul 2006, ISBN: 975-04-0381-9)
  6. *Abstracts of the Fourth International Conference "Inverse Problems: Modeling and Simulation"*, H.T. Banks, A. Hasanoglu (Hasanov), S.I. Kabanikhin, F. Kappel Eds., Abstracts of the Fourth International Conference "Inverse Problems: Modeling and Simulation", May 26th - 30th, 2008, Fethiye, Turkey (Literatr, Istanbul 2008, ISBN: 978-975-04-0454-2)
  7. *Inverse Problems in Science and Engineering*, A. Hasanoglu (Hasanov), D. Lesnic Guest Eds., (Special Issue of the Journal *Inverse Problems in Science and Engineering* (**18**(1) 2010): Proceedings of the 4th International Conference "Inverse Problems: Modeling and Simulation, May 26th - 30th, 2008, held in Fethiye, Turkey)
  8. *Abstracts of the Fifth International Conference "Inverse Problems: Modeling and Simulation"*, A. Hasanoglu (Hasanov), B. Hofmann, S.I. Kabanikhin Eds., Abstracts of the Fifth International Conference "Inverse Problems: Modeling and Simulation", May 24th - 29th, 2010, Antalya, Turkey (Izmir University, Izmir 2010, ISBN: 978-605-88696-0-8)
  9. *Inverse Problems in Science and Engineering*, A. Hasanoglu (Hasanov), D. Lesnic Guest Eds., (Special Issue of the Journal *Inverse Problems in Science and Engineering* (**19**(5) 2011): Proceedings of the 5th International Conference "Inverse Problems: Modeling and Simulation, May 24th - 29th, 2010, held in Antalya, Turkey)
  10. *Applicable Analysis* (**90**(10) 2011), A. Hasanoglu (Hasanov), Guest Ed., (Special Issue: Dedicated to Michael V. Klibanov, outstanding expert in inverse problems)

### Conference Organizations

1. *The International Workshop on Nonlinear and Improperly Posed Problems*, August 17-23, 1998, Kocaeli, Turkey, Co-Chair of the International Program Committee
2. *The International Conference on Nonlinear Analysis and Nonlinear Modeling* (IFNA), July, 17-23, 2001, Fethiye, Turkey, Chair of the International Program Committee
3. *The First International Conference "Inverse Problems: Modeling and Simulation"*, July, 14-21, 2002, Fethiye, Turkey, Co-Chair of the International Program Committee
4. *The Second International Conference "Inverse Problems: Modeling and Simulation"*, June 07-12, 2004, Fethiye, Turkey, Co-Chair of the International Program Committee
5. *The Third International Conference "Inverse Problems: Modeling and Simulation"*, May 29-June 02, 2006, Fethiye, Turkey, Co-Chair of the International Program Committee (For the history of Fethiye conferences see the paper "International Conferences Inverse Problems: Modeling and Simulation (Fethiye-Turkey), 2002, 2004, 2006 (by A. Hasanov), *Journal of Inverse and Ill-posed Problems*, Volume 15(1), pp. 107111 (ISSN (Online) 1569-3953, ISSN (Print) 0928-0219))
6. *6th International ISAAC Congress*, August 13-18, 2007, Middle East Technical University, Ankara, Turkey, Co-Chair of the Special Section: "Inverse and Ill-Posed Problems"
7. *6th International Conference on Inverse Problems in Engineering: Theory and Practice*, June 15-19, 2008, Paris-Dourdan, France, Member of the Scientific and Editorial Committee
8. *The Fourth International Conference "Inverse Problems: Modeling and Simulation"*, May 26-30, 2008, Oludeniz-Fethiye, Turkey, Co-Chair of the International Program Committee
9. *The Second International Conference "Problems of Cybernetics and Informatics"* (PCI'2008),



- September 10-12, 2008, Baku, Azerbaijan, Member of the International Program Committee
10. *International Conference "Algorithmic Analysis of Unstable Problems"* (Dedicated to the 100th anniversary of outstanding Russian mathematician V.K. Ivanov), September 01-06, 2008, Ekaterinburg, Russia, Member of the International Program Committee
  11. *International Conference "Computational and Informational Technologies in Science, Engineering and Education"* (CTMM-2008), Almaty, Kazakhstan, September 10-14, 2008, Member of the International Program Committee
  12. *The III Congress of Turkish World Mathematicians*, June 30 - July 4, 2009, Almaty, Kazakhstan, Member of the International Program Committee
  13. *International Conference "Modern problems of applied mathematics and information technologies - Al-Khorezmiy 2009"*, September 18- 21, 2009, Tashkent, Uzbekistan, Co-Chair of the International Program Committee
  14. *The Fifth International Conference "Inverse Problems: Modeling and Simulation"*, Antalya - Turkey, May 25-30, 2010, Chair of the International Program Committee
  15. *The 6th International Conference "Inverse Problems: Modeling and Simulation"*, Antalya - Turkey, May 21-26, 2012, Chair of the International Program Committee

#### **Membership in International Program/Organizing Committees**

- Conference on Applied Computational Mathematics, Baku, April, 1983
- International IMACS Conference, Moscow, June, 1990
- The First General Assembly of Local Authorities of Turkish Republics, The Association of Marmara Municipalities, June 16-18, 1998, Istanbul, Turkey
- International Workshop on Nonlinear and Ill-Posed Problems (Co-Chair), Kocaeli-Turkey, August, 1998
- International Conference on Environmental Mathematical Modeling and Numerical Analysis (EMMNA'99), Rostov State University, Rostov, Russia, May 24-31, 1999
- Third International Conference "Finite-Difference Methods: Theory and Applications", Palanga, Lithuania, September 1-4, 2000
- International IFNA Conference "The First International Conference on Nonlinear Analysis and Nonlinear Modeling" (Co-Chair), Fethiye - Turkey, July 17-23, 2001
- International Conference "Computational Methods in Applied Mathematics:CMAM-1", Minsk, Belarus, July 21-25, 2003
- Second International Conference on Modeling Simulation and Applied Optimization (ICMSAO), The American University of Sharjah, Sharjah, U.A.E., February 1-3, 2006
- The Third International Conference "Information Technologies and Telecommunications in Education and Science", Turkey, Fethiye, May 13-17, 2007
- 6th International ISAAC Conference, Special Session "Inverse and Ill-Posed Problems: Analysis and Their Applications" (Co-Chair), Ankara - Turkey, August 13-18, 2007
- Asia Simulation Conference (AsiaSim 2007), October 10-12, Seoul, Korea
- 6th International Conference on Inverse Problems in Engineering: Theory and Practice Dourdan (Paris), France - June 15-19, 2008
- The International Conference "Algorithmic Analysis of Ill-Posed Problems" (Dedicated 100 year of V.K. Ivanov), Ekaterinburg, Russia - September 01-06, 2008
- The International Conference "Computational and Information Technologies in Science, Engineering and Education", September 10-14, 2008, Almaty, Kazakhstan
- III Congress of the Turkish World Mathematicians, June 30 - July 04, 2009, Almaty, Kazakhstan
- International Conference and Young Scientists School "Theory and Computational Methods for Inverse and Ill-posed Problems" Akademgorodok, Novosibirsk, Russia, 10-20 August 2009
- 7th International Conference on Inverse Problems in Engineering (ICIPE), University of Central Florida, USA, May 4-6, 2011
- 8th International ISAAC Congress, Co-Chair of the Session "Inverse problems", Peoples' Friendship University of Russia, Moscow, August 21-27, 2011

- The International Conference "Inverse and Ill-Posed Problems of Mathematical Physics" (dedicated to the 80th anniversary of the birthday of Academician M.M. Lavrentiev), Novosibirsk, Russia, August 5-12, 2012

**Other Professional Activities**

1993-2006 Organizer and Chair of Applied Mathematical Sciences Research Center at Kocaeli University, Turkey

1997-2003 Member of the Coordination Committee of the International Black Sea Club (at United Nations)

1996-present Member of Kocaeli University Association

1998-Member of Consulting Group of The First Congress of Local Authorities of Turkish Republics

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