Researches & Recent selected publications
Jin Keun Seo

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Professional Experience:

2009-present	Director of CSE-WCU center at Yonsei University
2009-2011	Head of Dept. of Computational Science & Engineering at Yonsei University
2009-2010	Committee member of National Basic Science Research Council
2008	Head of Math. Dept. at Yonsei University
2003-2005	Director of BK21: Mathematical Science at Yonsei university
2001-2009	Chief of algorithm group at Impedance Imaging Research Center
2006-2007	Chief of interdisciplinary division of National Institute for Math. Sciences
1995-present	Professor/Associate/Assistant professor at Yonsei University
1992-1994	Assistant professor at POSTECH

Education: Ph.D. and M.A. (Mathematics), University of Minnesota, Minnesota, 1991
BA (Mathematics), Yonsei University, Korea, 1985

Area of research: Inverse Problems, Mathematical modeling, Image Processing, Partial Differential Equations, Harmonic Analysis

Awards and Honors

1. Distinguished research prize from Korean Math. Soc, 2000
2. Best research prize from Yonsei university, 2000
3. Best Teacher Award from Yonsei university, 2007
4. Best Teacher Award from Yonsei university, 2008
5. Best Outcome in Science: World class university, MEST, Korea government, 2011

Books:

1. Nonlinear Inverse Problems in Imaging, Jin Keun Seo and Eung Je Woo, Wiley Press, 2012
2. Mathematical Modeling in Biomedical Imaging I, H Ammari(ed), Lecture Notes in Mathematics 1983, Springer, 2009
3. Electrical Impedance Tomography: Methods, History and Applications: Chapter 9 (editor: D S Holder, ISBN: 0750309520, IOP),IOP Publishing, 2005.
4. Medical Imaging Systems Technology: Modalities: Chapter 7(editor: C T Leondes, ISBN: 9812569928, World Scientific),C T Leondes (ed), World Scientific, 2005.

Patents(International):2010-2012

1. System and method for visualizing conductivity and current density distribution in object, EP 1952764 B1, Issue data: May 5, 2010.

2. System for electrical impedance tomography and method thereof US 7847565 B2, Issue data: Dec 7, 2010.
3. "Method and apparatus to segment motion area in real-time to detect motion in surveillance camera system" (Samsung Electronics), Patent number:US 8094936, Issue Date: Jan 10, 2012.

Patents(Korea) 1. 7 patents

PUBLICATIONS

Journal (2011-)

108 Y. Song, H Kwon, K. Jeon, Y M Jung, J K Seo, E J Woo, Analysis and brocking of error propagation by region-dependent noisy data in MREIT, SIAM J. Scientific Computing, 2013

107 Munkh-Erdene Ts, Eunjung Lee, Jin Keun Seo , Bastian Harrach , Sungwhan Kim Projective electrical impedance reconstruction with two measurements, SIAM J. on Applied Math., 2013

106 Hyoung Suk Park, Jae Kyu Choi, Kyung-Ran Park, Kyung Sang Kim, Sang-Hwy Lee, Jong Chul Ye, and Jin Keun Seo, Metal Artifact Reduction in CT by identifying missing data hidden in metals, Journal of X-Ray Science and Technology, 2013

105 Jin Keun Seo, Tushar Kanti Bera, Hyeuknam Kwon and Rosalind Sadleir, Effective admittivity of biological tissues as a coefficient of elliptic PDE, Computational and Mathematical Methods in Medicine, Volume 2013, Article ID 353849, (2013)

104 A. Yao, C. L. Yang, J. K. Seo, and M. Soleimani, "EIT-Based Fabric Pressure Sensing," Computational and Mathematical Methods in Medicine, vol. 2013, Article ID 405325, 2013

103 Joonsung Lee, Yizhuang Song,Narae Choi, Sungmin Cho,Jin Keun Seo, and Dong-Hyun Kim, Noninvasive Measurement of Conductivity Anisotropy at Larmor Frequency Using MRI, Computational and Mathematical Methods in Medicine, Volume 2013 , Article ID 421619, (2013)

102 Ulrich Katscher, Dong-Hyun Kim, and Jin Keun Seo, Recent Progress and Future Challenges in MR Electric Properties Tomography, Computational and Mathematical Methods in Medicine, Volume 2013, Article ID 546562, (2013)

101 Kyung-Ran Park, Hyung-Seog Park, Zhengguo Piao, Moon-Key Kim, Hyung-Seog Yu, Jin Keun Seo, Sang-Hwy Lee, Three-dimensional vector analysis of mandibular structural asymmetry, Journal of Cranio-Maxillo-Facial Surgery, 21, Jan 2013.

100 Jiah Song, Oh In Kwon, Jin Keun Seo, Anisotropic elastic moduli reconstruction in transversely isotropic model using MRE, Inverse Problems, Volume 28, Number 11, November 2012 , pp. 115003-115015(13)

99 H. Kwon, H. Wi, B. Karki, E.J. Lee, A. McEwan, E.J. Woo, B. Harrach, J.K. Seo and T.I. Oh, Bioimpedance spectroscopy tensor probe for anisotropic measurements, Electron. Lett. 27 September 2012 Volume 48, Issue 20, p.1253-1255

98 Jin Keun Seo, Dong-Hyun Kim, Joonsung Lee, Oh In Kwon, Saurav Z. K. Sajib and Eung Je Woo, Electrical tissue property imaging using MRI at dc and Larmor frequency, Inverse Problems, 28, (2012), 084002 (26pp)

97 Sungwhan Kim, Eun Jung Lee, Eung Je Woo and Jin Keun Seo**, Asymptotic analysis of the membrane structure to sensitivity of frequency-difference electrical impedance tomography, Inverse Problems, 28, (2012) 075004
[http://iopscience.iop.org/0266-5611/28/7/075004/article]

96 Eunjung Lee, Munkh-Erdene Ts, Jin Keun Seo and Eung Je Woo*, Breast EIT using a new projected image reconstruction method with multi-frequency measurements, Physiol. Meas. 33 (2012) 751?765

95 Jin Keun Seo, Min-oh Ghim, Joonsung Lee, Narae Choi, Eung Je Woo, Hyung Joong Kim, Oh In Kwon and Dong-Hyun Kim, "Error Analysis of Nonconstant Admittivity for MR-Based Electric Property Imaging", IEEE Transactions on Medical Imaging, vol. 31, no.2, Feb. 2012.

94 Chi Young Ahn, Yoon Mo Jung*, Oh In Kwon, Jin Keun Seo, Fast segmentation of ultrasound images using robust Rayleigh distribution decomposition, Pages 3490-3500, Pattern Recognition, vol 45, Iss 9, 2012

93 Jin Keun Seo and Eung Je Woo,"Magnetic Resonance electrical impedance tomography (MREIT)", SIAM Review (2011) *

92 Jin Keun Seo, Kiwan Jeon, Chang-Ock Lee and Eung Je Woo, Non-iterative harmonic Bz algorithm in MREIT, Inverse Problems 27 (2011) 085003 (12pp)

91 Yizhuang Song , Eunjung Lee, Jin Keun Seo, Eung Je Woo, Optimal geometry toward uniform current density electrodes, Inverse Problems, Inverse Problems Vol.27, Issue 7, 2011.06.03

90 Chi Young Ahn, Yoon Mo Jung, Oh In Kwon, Jin Keun Seo, "A Regularization Technique for Closed Contour Segmentation in Ultrasound Images", IEEE Transections on Ultrasonics Ferroelectrics and Frequency Control, vol 58(8) 1577-1589, 2011.08

89 Tong In Oh, Young Tae Kim, Atul Minha, Jin Keun Seo, Oh In Kwon and Eung Je Woo, Ion mobility imaging and contrast mechanism of apparent conductivity in MREIT, Physics in Medicine and Biology 56 (2011) 2265-2277

88 Eunjung Lee, Jin Keun Seo, Eung Je Woo and Tingting Zhang, Mathematical framework for a new microscopic electrical impedance tomography (micro-EIT) system, Inverse Problems 27 (2011) 055008.

87 Qin Liu, Tong In Oh, HunWi, Eun Jung Lee, Jin Keun Seo, and Eung Je Woo, Design of microscopic electrical impedance tomography (micro-EIT) system using two current injections, Physiological Measurement, 32 (2011) 08-10. pp. 1505?1516

86 Sujin Ahn, Tong In Oh, Sung Chan Jun, Jin Keun Seo and Eung Je Woo, "Validation of weighted frequency-difference EIT using a three-dimensional hemisphere model and phantom", Physiological Measurement, 32 (2011) 1663-1680, 2011.09

Journal (2006-2010)

85 Bastian Harrach, Jin Keun Seo, "Exact shape-reconstruction by one-step linearization in electrical impedance tomography", SIAM Journal on Mathematical Analysis, vol 42, no 4, pp 1505-1518 (2010)

84 Liu Jijun, Jin Keun Seo and Eung Je Woo," A posteriori error estimates for the conductivity image reconstruction in MREIT", SIAM J. App. Math.,vol 70, no 8,pp 2883-2903 (2010)

83 Bastian Harrach, Jin Keun Seo and Eung Je Woo,"Factorization Method and Its Physical Justification in Frequency-Difference Electrical Impedance Tomography ", IEEE Transactions on Medical Imaging, vol 19, no 10(2010)

82 Kiwan Jeon, Hyung Joong Kim, Chang-Ock Lee, Jin Keun Seo and Eung Je Woo, Integration of the denoising, inpainting and local harmonic Bz algorithm for MREIT imaging of intact animals. Phys. Med. Biol. 55 (2010) 7541-7556

81 Hyenkyun Woo, Yoon Mo Jung, Jeong-Gyoo Kim, and Jin Keun Seo,"Environmentally Robust Motion Detection for Video Surveillance",IEEE TRANSACTIONS ON IMAGE PROCESSING, VOL. 19, NO. 10 (2010)

80 Tae Hwi Lee, Chi Young Ahn, Oh In Kwon, and Jin Keun Seo,"A hybrid inversion method for shear modulus imaging using time-harmonic vibrations", Inverse Problems vol 26, pp1-13(2010)

79 Hyenkyun Woo, Sungwhan Kim, Hyea Hyun Kim, Jin Keun Seo, Mathematical Background for Robust and real-time electrical capacitance tomography and Mathematical, Inverse Problems in Science and Engineering, vol 18, no 5, pp 691-709 (2010)

78 Bastian Harrach, Jin Keun Seo,"Detecting Inclusions in electrical impedance tomography without reference measurements", SIAM J. on Applied Mathematics, vol 69, no 6 pp 1662-1681 (2009)

77 Sungwhan Kim, Jin Keun Seo, and Teayoung Ha, "A nondestructive evaluation method for concrete voids: frequency differential electrical impedance scanning", SIAM J. App. Math. vol 69, no 6 pp 1759-1771 (2009)

76 Jihyeon Kuen, Eung Je Woo and Jin Keun Seo, Multi-frequency time-difference complex conductivity imaging of canine and human lungs using the KHU Mark1 EIT system, Physiol. Meas. 30 S149?-S164(2009)

75 Oh In Kwon, Chunjae Park, Hyun Soo Nam, Eung Je Woo,, Jin Keun Seo, K.J. Glaser, A. Manduca, and R.L. Ehman, Shear Modulus Decomposition Algorithm in Magnetic Resonance Elastography, IEEE Transection Medical Imaging, vol. 28(10):1526-33. (2009)

74 Sung Chan Jun , Jihyeon Kuen , Jeehyun Lee , Eung Je Woo, David Holder and Jin Keun Seo, Frequency-difference EIT (fdEIT) using weighted difference and equivalent homogeneous admittivity validation by simulation and tank experiment, Physiol. Meas. 30 (2009) 1087-1099

73 Kiwan Jeon, Atul S Minhas, Young Tae Kim,Woo Chul Jeong, Hyung Joong Kim, Byeong Teck Kang, Hee Myung Park, Chang-Ock Lee, Jin Keun Seo and Eung Je Woo, MREIT conductivity imaging of the postmortem canine abdomen using CoReHA, Physiol. Meas. 30 957-966(2009)

72 Hyung Joong Kim, Young Tae Kim, Atul S. Minhas, Woo Chul Jeong, Eung Je Woo, Jin Keun Seo, and O Jung Kwon, In Vivo High-resolution Conductivity Imaging of the Human Leg using MREIT: the First Human Experiment, IEEE Transection Medical Imaging, VOL. 28, NO. 11, pp 1681-1687, November 2009

71 Jin Keun Seo, Bastian Harrach, Eung Je Woo, Recent Progress on Frequency Difference Electrical Impedance Tomography, ESAIM:PROCEEDINGS, April 2009, Vol. 26,pp. 150-161

70 Kiwan Jeon , Chang-Ock Lee , Hyung Joong Kim , Eung Je Woo , Jin Keun Seo, CoReHa, conductivity reconstructor using harmonic algorithms for magnetic resonance electrical impedance tomography, J. Biomed. Eng. Res. vol 30, 279-287(2009)

69 Jin Keun Seo, Jeehyun Lee, Sung Wan Kim, Habib Zribi and Eung Je Woo2 Frequency-difference electrical impedance tomography (fdEIT): algorithm development and feasibility study, 9 Physiol. Meas. 29 (2008) 929-944

68 Magnetic resonance electrical impedance tomography (MREIT) for high-resolution conductivity imaging, Eung Je Woo and Jin Keun Seo, Physiol. Meas. 29 (2008) R1-R26

67 Local Harmonic B_z-Algorithm with Domain Decomposition in MREIT: Computer Simulation Study, Jin Keun Seo, Sung Wan Kim, Sungwhan Kim, Jijun Liu, Eung Je Woo, Kiwan Jeon, and Chang-Ock Lee, IEEE Transection Medical Imaging, vol 27, no 12,pp 1754-1761 (2008.12)

66 Multi-frequency trans-admittance scanner: mathematical framework and feasibility, Sungwhan Kim, Jeehyun Lee, Jin Keun Seo, Eung Je Woo, and Habib Zribi, SIAM J. App. Math. vol 69, no 1 pp 22-36(2008)

65 On the convergence of the harmonic B_z algorithm in magnetic resonance electrical impedance tomography , J.J. Liu, JK Seo, M. Sini, and Eung Je Woo, SIAM journal on applied mathematics. vol 67, pp 1259-1282 (2007)

64 Feasibility of breast cancer lesion detection using multi-frequency trans-admittance scanner (TAS) with 10Hz to 500kHz bandwidth, Tong In Oh, Jeehyun Lee, Jin Keun Seo, Sung Wan Kim and Eung Je Woo, Physiological Measurement. vol 28, pp S71-S84 (2007)

63 Mathematical framework for current density imaging due to discharge of electro-muscular disruption devices , Jeehyun Lee, Jin Keun Seo, and Eung Je Woo, Mathematical Modelling and Numerical Analysis. vol 41, pp 447-459(2007)

62 Level Set based Bimodal Segmentation with Stationary Global Minimum , SH Lee and JK Seo, IEEE Transactions on Image Processing, vol 15, no 9, 2831-2843(2006)

61 Convergence properties and stability issues in MREIT algorithm, JJ Liu, HC Pyo, JK Seo, and EJ Woo , Contemporary math. vol 51, no 5, 201-218 (2006)

60 A direct tracking method for a grounded conductor inside a pipeline from capacitance measurements, HK Woo, SW Kim, JK Seo, B Lionhart, EJ Woo, Inverse Problem 22 no. 2 481-494 (2006)

59 Mathematical Framework for Bz-Based MREIT Model in Electrical Impedance Imaging(Ohin Kwon, HC Pyo, J. K. Seo, and E. J. Woo), Computer and Mathematics with Applications, vol 51, no 5, 817-828(2006)

58 Conductivity Image reconstruction from defective data in MREIT; Numerical simulation and animal experiment, Suk-Ho Lee, Jin Keun Seo, Byung Il Lee, Eung Je Woo, Soo Yeol Lee, Ohin Kwon and Jooyoung Hahn, IEEE Trans. Med. Imaging. vol 25, no 2, pp 168-176 (2006.2)

57 Basic setup for breast conductivity imaging using magnetic resonance electrical impedance tomography, Byung Il Lee, Suk Hoon Oh, Tae-Seong Kim, Eung Je Woo1, Soo Yeol Lee1, Ohin Kwon2 and Jin Keun Seo, Phys. Med. Biol. 51, pp 443-455 (2006.1)

Journal (-2005)

56 Identification of current density distribution in electrically conducting subject with anisotropic conductivity distribution", Hyun Chan Pyo, Ohin Kwon, Jin Keun Seo and Eung Je Woo, Phys. Med. Biol. 50 (2005) 3183-3196

55 Harmonic Decomposition in PDE-Based Denoising Technique for Magnetic Resonance Electrical Impedance Tomography, Byung Il Lee, Suk-Ho Lee, Tae-Seong Kim, Ohin Kwon, Eung Je Woo, Member, IEEE, and Jin Keun Seo, IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING, VOL. 52, NO. 11, 1912-1920, NOVEMBER 2005

54 Noise analysis in magnetic resonance electrical impedance tomography at 3 and 11 T field strengths, Rosalind Sadleir, Samuel Grant, Sung Uk Zhang, Byung Il Lee, Hyun Chan Pyo, Suk Hoon Oh, Chunjae Park, Eung Je Woo, Soo Yeol Lee, Ohin Kwon and Jin Keun Seo, Physiol. Meas. 26 875-884 (2005)

53 Electrical conductivity images of biological tissue phantoms in MREIT, Suk Hoon Oh1, Byung Il Lee1, Eung Je Woo1, Soo Yeol Lee1, Tae-Seong Kim1, Ohin Kwon2 and Jin Keun Seo, Physiol. Meas. 26 S279-S288 (2005)

52 Electrical conductivity imaging using a variational method in Bz-based MREIT, Ohin Kwon, Chunjae Park, Eun-Jae Park, Jin Keun Seo, and Eung Je Woo, Inverse Problems 21 (2005) 969-980 Suk Ho Lee, Jin Keun Seo: Noise removal with Gauss curvature-driven diffusion. IEEE Transactions on Image Processing 14(7): 904-909 (2005)

51 Magnetic resonance electrical impedance imaging: conductivity and current density imaging, JK Seo, O Kwon, EJ Woo, J. Physics (proceeding)(2005)

50 Image reconstruction of anisotropic conductivity tensor distribution in MREIT: computer simulation study (JK Seo, HC Pyo, O. Kwon and E. J. Woo), Phys. Med. Biol. 49, pp4371-438 (2004)

49 On stability for a translated obstacle with impedance boundary condition (JiJin Liu and Jin Keun Seo), Nonlinear Analysis 59, 731-744 (2004)

48 Magnetic resonance electrical impedance tomography: phantom experiments using a 3.0 Tesla MRI system, (S. H. Oh, B. I. Lee, S. Y. Lee, E. J. Woo, M. H. Cho, JK Seo, O. Kwon), Magnetic Resonance in Medicine 51, 1292-1296 (2004)

47 T-Scan Electrical Impedance Imaging System for Anomaly Detection , (Habib Ammari, Ohin Kwon, Jin Keun Seo and Eung Je Woo) SIAM Journal on Applied Mathematics, vol 65, no 1, pp252-266 (2004)

46 Mathematical framework and lesion estimation algorithm for breast cancer detection: electrical impedance technique using TS2000 configuration , Jin Keun Seo, Ohin Kwon, Habib Ammari, and Eung Je Woo, IEEE Trans. Biomedical Eng., VOL. 51, NO. 11, pp1898-1906, November 2004

45 Electrical conductivity imaging using gradient Bz decomposition algorithm in magnetic resonance electrical impedance tomography (MREIT), Chunjae Park, Ohin Kwon, Eung Je Woo, and Jin Keun Seo, IEEE Trans. Medical Imaging vol 23, no 3, pp 388-394 (March 2004)

44 Static conductivity imaging using variational gradient Bz algorithm in Magnetic Resonance Electrical Impedance Tomography (MREIT), Physiological Measurement, [Chunjae Park, Eun-Jae Park, Eung Je Woo, Ohin Kwon and Jin Keun Seo, vol 25, no. 1, pp257-271(2004.2)

43 Uniqueness and convergence of conductivity image reconstruction in Magnetic Resonance Electrical Impedance Tomography, Yong Jung Kim, Ohin Kwon, JinKeun Seo and Eung Je Woo, Inverse Problems 19, 1213-1225 (2003)

42 Conductivity and current density image reconstruction using harmonic Bz algorithm in MREIT, Physics in Medicine and Biology 48, Suk Hoon Oh, Byung Il Lee, Eung Je Woo, Soo Yeo Lee, Min Hyoung Cho, Ohin Kwon and Jin Keun Seo, pp3103-3116(2003.9)

41 Reconstruction of conductivity and current density image with only one component of magnetic field measurements, Jin Keun Seo, Jeong-Rock Yoon, Eung Je Woo, and Ohin Kwon, IEEE Trans. Biomedical Eng., vol 50, no 9, pp 1121-1124 (2003)

40 Three-Dimensional Forward Solver and its performance analysis for Magnetic Resonance Electrical Impedance Tomography (MREIT)using recessed electrodes, B. I. Lee, S. H. Oh, E. J. Woo, S. Y. Lee, M. H. Cho, O. Kwon, J. K. Seo, J. Y. Lee, and W. S. Baek, Physics in Medicine and Biology, 48, pp 1971-1986(2003)

39 Reconstruction of current density distributions in axially symmetric cylindrical sections using one component of magnetic flux density: computer simulation study, J. K. Seo, O. Kwon, B. I. Lee, and E. J. Woo, Physiological Measurement, vol 24, pp 565-578, (2003.5)

38 Static resistivity image of a cubic saline phantom in magnetic resonance electrical impedance tomography (MREIT), B. I. Lee, S. H. Oh, E. J. Woo, S. Y. Lee, M. H. Cho, O. Kwon, and J. K. Seo, Physiological Measurement, 24, pp 579-590(2003.5)

37 An accurate formula for the reconstruction of conductivity Inhomogeneity, Ammari Habib and Jin Keun Seo, Advances in Applied Math, vol 30, 679-705 (2003)

36 Estimation of Anomaly Location and Size using Electrical Impedance Tomography, O. Kwon, J. R. Yoon, J. K. Seo, and E. J. Woo, IEEE Trans. Biomedical Eng., vol. 50, no. 1, pp. 89-96(2003)

35 On a nonlinear partial differential equation arising in Magnetic Resonance Electrical Impedance Tomography, S. W. Kim, O. Kwon, J. K. Seo, J. R. Yoon, SIAM J. Math. Analysis, vol. 34, no. 3, pp. 511-526, (2002)

34 Location Search Techniques for a grounded conductor, (Kwon, Ohin; JK Seo, Sung Whan Kim), SIAM J. Applied Math., 62 , no. 4, 1383–1393 (2002)

33 J-substitution algorithm in magnetic resonance electrical impedance tomography (M-REIT): phantom experiments for static resistivity images,(H. S. Khang, B. I. Lee, S. H. Oh, E. J. Woo, S. Y. Lee, M. H. Cho, O. I. Kwon, J. R. Yoon, JK Seo) IEEE Trans. Med. Imaging, vol 21, no 6, pp 695-702 , (2002)

32 Magnetic Resonance Electrical Impedance Tomography (MREIT)using Internal Current Density Distribution: Simulation Study, (O Kwon, JK Seo , JR Yoon, EJ Woo), IEEE Trans. Biomedical Engineering, vol 49, no 2 pp 160-167, 2002

31 A real-time algorithm for the location search of discontinuous conductivities with one measurement. (O Kwon, JK Seo , JR Yoon), Communications on Pure and Applied Mathematics, 55, no. 1, 1–29, (2002)

30 Total size estimation and identification of multiple anomalies in the inverse conductivity problem. Inverse Problems 17 (2001), no. 1, 59–75. (with Kwon, Ohin)

29 Optimal size estimates for the inverse conductivity problem with one measurement. Proc. Amer. Math. Soc. 128 (2000), no. 1, 53–64. (with Alessandrini, G.; Rosset, E.)

28 Lipschitz stability estimates for translations and balls in inverse scattering. Inverse Problems 16 (2000), no. 2, 293–301. (with Kwon, Ohin)

27 Identification of two-phase free boundary arising in plasma physics. SIAM J. Math. Anal. 31 (2000), no. 6, 1295–1306 (with Lee, June-Yub)

26 Identification of domains with near-extreme conductivity: global stability and error estimates. Inverse Problems 15 (1999), no. 4, 851–867. (with Kang, Hyeonbae)

25 Inverse conductivity problem with one measurement: uniqueness of balls in R^3. SIAM J. Appl. Math. 59 (1999), no. 5, 1533–1539 (with Kang, Hyeonbae)

24 Inverse conductivity problem with one measurement: error estimates and approximate identification for perturbed disks. SIAM J. Math. Anal. 30 (1999), no. 4, 699–720 (with Fabes, Eugene; Kang, Hyeonbae)

23 Identification problems in linear elasticity. J. Math. Anal. Appl. 215 (1997), no. 2, 514–531. (with Kim, Hyunseok)

22 The inverse conductivity problem with one measurement: stability and estimation of size. SIAM J. Math. Anal. 28 (1997), no. 6, 1389–1405. (with Kang, Hyeonbae; Sheen, Dongwoo)

21 Numerical identification of discontinuous conductivity coefficients. Inverse Problems 13 (1997), no. 1, 113–123. (with Kang, Hyeonbae; Sheen, Dongwoo)

20 Identification of a free boundary arising in a magnetohydrodynamics system. Inverse Problems 13 (1997), no. 5, 1301–1309. (with Kang, Kyung-Keun; Lee, June-Yub)

19 Unique determination of a collection of a finite number of cracks from two boundary measurements. SIAM J. Math. Anal. 27 (1996), no. 5, 1336–1340. (with Kim, Hyunseok)

18 The layer potential technique for the inverse conductivity problem. Inverse Problems 12(1996), no. 3, 267–278. (with Kang, Hyeonbae)

17 On the uniqueness in the inverse conductivity problem. J. Fourier Anal. Appl. 2 (1996), no. 3, 227–235.

16 Cauchy transforms on polynomial curves and related operators. Nagoya Math. J. 138 (1995),19–32. (with Kang, Hyeonbae)

15 Regularity for solutions of a certain elliptic equation near a nonsmooth interface. Nonlinear Anal. 23 (1994), no. 7, 949–952. (with Pahk, Dae Hyeon)

14 Unimodular wavelets for L^2 and the Hardy space H^2. Michigan Math. J. 41 (1994), no. 2, 345–361. (with Ha, Young-Hwa; Kang, Hyeonbae; Lee, Jungseob)

13 L^2-boundedness of the Cauchy transform on smooth non-Lipschitz curves. Nagoya Math. J. 130 (1993), 123–147. (with Kang, Hyeonbae)

12 The inverse conductivity problem with one measurement: uniqueness for convex polyhedra. Proc. Amer. Math. Soc. 122 (1994), no. 1, 183–189. (with Barcelo, Bartolomo; Fabes, Eugene)

11 Regularity properties of solutions to transmission problems. Trans. Amer. Math. Soc. 338 (1993), no. 1, 405–430. (with Escauriaza, Luis)

10 The spectral radius of the classical layer potentials on convex domains, 129–137, IMA Vol. Math. Appl., 42, Springer, New York, 1992. (with Fabes, Eugene; Sand, Mark)

09 Magnetic resonance electrical impedance tomography. Commun. Korean Math. Soc. 16 (2001), no. 3, 519–541. (with Kwon, Ohin; ; Woo, Eung Je; Yoon, Jeong-Rock)

08 Electrical impedance imaging for searching anomalies. Commun. Korean Math. Soc. 16 (2001), no. 3, 459–485. (with Kwon, Ohin; Woo, Eung Je; Yoon, Jeong-Rock)

07 Inverse conductivity problems and electrical impedance tomography. (Korean) Commun. Korean Math. Soc. 16 (2001), no. 3, 333–369. (with Kang, Hyeonbae)

06 A note on uniqueness and stability for the inverse conductivity problem with one measurement. J. Korean Math. Soc. 38 (2001), no. 4, 781–791. (with Kang, Hyeonbae)

05 Recent progress in the inverse conductivity problem with single measurement. Inverse problems and related topics (Kobe, 1998), 69–80, Chapman & Hall/CRC Res. Notes Math., 419, Chapman & Hall/CRC, Boca Raton, FL, 2000. (with Kang, Hyeonbae)

04 Global shape of free boundary satisfying Bernoulli type boundary condition. J. Korean Math. Soc. 37 (2000), no. 1, 31–44. (with Lee, June-Yub)

03 On stability of a transmission problem. J. Korean Math. Soc. 34 (1997), no. 3, 695–706. (with Kang, Hyeonbae)

02 Regularity for solutions of biharmonic equation on Lipschitz domain. Bull. Korean Math. Soc. 33 (1996), no.1, 17–28.

01 On the restrictions of BMO. J. Korean Math. Soc. 31 (1994), no. 4,703–707. (with Kang, Hyeonbae; Shim, Yong-sun)

00 Many proceeding papers are not included.

Proceeding Papers

1. Not include here.

Journal Editor (2012-)

1. Inverse Problems and Imaging, American Institute of Mathematical Science, Associate Editor, [http://aimsciences.org/journals/home.jsp?journalID=11]
2. Inverse Problems in Science & Engineering, Associate Editor, [http://www.tandfonline.com/toc/gipe20/current]
3. Computational and mathematical Method in Medicine, lead guest editor, special issue (2013.2)

International Committee (2012-)

1. (Scientific Committee) Applied Inverse Problem Conference, July 1-5, 2013, Daejeon, KOREA
2. (Scientific Committee) International Conference IPDO 2013, June 26-28, Albi, France
3. (Organizer) SIAM Conference on Imaging Science (IS12), Philadelphia, USA, 2012.5.20-22
4. (Steering Committee) 13th International Conference on Biomedical Applications of Electrical Impedance Tomography (EIT 2012): Tianjin, China, 2012.5.23-25
5. (Scientific Committee) International Conference on Inverse problems and related topics 2012, 2012.10.21-10.26, Southeast university, Nanging, China,

6. (Scientific Committee) the Symposium on Inverse Problems, Design and Optimization (IPDO2013) that will be held in beautiful Albi, France, June 26-28, 2013.
7. (Scientific Committee) Applied Inverse Problem Conference, July 1 5, 2013, Fusion Hall, KI Building, Korea Advanced Institute for Sciences and Technology, Daejeon, KOREA,