

Curriculum Vitae – Feng Liu

Contact Details: School of Information Technology & Electrical Engineering,
The University of Queensland, Brisbane, Qld. 4072., Australia
Ph +61-7-3365 3982
Email: feng@itee.uq.edu.au

Present Appointment: Senior Research Fellow,
School of ITEE, The University of Queensland (UQ).

Degrees Held: Ph.D., (Biomedical Engineering)
Zhejiang University, P.R. China, 2000.
M. Eng. (Electrical Engineering)
Shandong University, P.R. China, 1995.
B. Eng. (Electrical Engineering)
Shandong University, P.R. China, 1992.

Recent Appointments: 2006-; Senior Research Fellow, School of ITEE, UQ.
2004-2005; Research Fellow, School of ITEE, UQ.
2003-2003; Post-doctoral Research Fellow, School of ITEE, UQ.
2000-2002; Post-doctoral Research Fellow,
Centre for Magnetic Resonance, UQ.
1996-1997; Deputy Manager, Jinan TianGao (SANKEN agent)
Company, China.
1995-1996; Research Fellow, Dept. of Automation,
Shangdong University.

Major research experience:

My research interests and experience are in the fields of Biomedical Engineering (BME), Magnetic Resonance Engineering (MRE), and Electrical Engineering & Electronics (EE).

1. In the BME field, I have been involved in the human heart FEM modeling and bioelectrical signal measurement and analysis. I also worked in the area of biomedical visualization and medical image processing.
2. In the MRE field, I have been developing design techniques and methods for addressing engineering problems in advanced magnetic resonance imaging. Specifically, I have been involved in developing new methodologies for the analysis and design of superconducting magnet, gradients and RF coils in NMR/MRI, simulation studies on the nerve/heart safety problems in modern MRI, and the investigation of the eddy current effects in superconducting and permanent magnets. For the RF coils, I have ever studied several kinds of structures such as birdcage, TEM, phased-array and other unconventional types. For the magnet design, I have worked on the unconventional structure such as asymmetric & open coils using inverse analysis and large scale nonlinear optimizations; I am also very familiar with active and passive shimming technology. I have also been active in research regarding MR imaging including parallel MRI, RF shimming for high field MRI, correction of distortions, etc.
3. In the EE field, I have both academic and industrial experience in the design of hardware and software for a range of complex electrical systems, especially for the AC motor control using microprocessor and inverter technology.

Over the past years, I have developed numerous computational and modeling algorithms using a wide range of tools. I am very experienced with many numerical methods that include finite-difference (quasi-static and

time-domain), finite-element method and moment method. I am familiar with the application of high-performance parallel computing techniques for engineering problems.

Teaching experience:

1. I was a part time lecturer in the Dept. of Automation, Shandong University, 1995 and taught power electronics to undergraduates.
2. 2003-present, I have been involved in supervising 5 Ph.D. students in the School of Information Technology & Electrical Engineering, UQ.

Industrial experience:

1. During 1995-1997, I was an electrical engineer and worked with Jinan Tiangao company (SANKEN agency).
2. From Jan 2005, I have been involved in the commercial design of the superconducting MRI magnet for many international companies including Magnetica (Australia).

Affiliations:

I was a member of IEEE and ISMRM. I am a reviewer for *IEEE Transactions on Biomedical Engineering*.

Research Grants:

- Cardiac electrographic modeling and analysis, 2005-2007, finished, Sponsor: ARC (Australian Research Council);
- Transceive Phased Arrays for Parallel Imaging in High Field Magnetic Resonance Microscopy, 2007-2010. Sponsor: ARC (Australian Research Council);
- Solutions for reducing magnetic resonance image degradations and tissue heating at high frequencies, 2010-2012. Sponsor: ARC (Australian Research Council);

Research Award:

UQ Mid-career Research Fellowship (2007-2011)
(See <http://www.uq.edu.au/research/orps/index.html?page=44679&pid=4811>)

Publications:

Patents:

- S. Crozier and F. Liu, Shielded, asymmetric Magnets for use in Magnetic Resonance Imaging, US2006255805-A1; GB2439857-A; US7375528-B2; GB2439857-B.
- S. Crozier, F. Liu and B.K. Li, phased array coil for MRI, WO 2006/094354 A1, US2008272785-A1.
- S. Crozier, H. Zhao and F. Liu, Magnets for use in Magnetic Resonance Imaging, WO2008049174-A1; GB2456968-A; IN200901990-P2; AU2007308759-A1; DE112007002511-T5
- E. Weber, A. Trakic, B.K. Li, F. Liu and S. Crozier, Shield moving apparatus, PCT2008906515.
- S. Crozier, B.K. Li, F. Liu and E. Weber, MRI coil design, WO2009124340-A1.

Peer-reviewed journal papers

1. A. Trakic, M. Akhand, H. Wang, D. Mason, F. Liu, S. Wilson and S. Crozier, Computational modelling of blood-flow-induced changes in blood electrical conductivity and its contribution to the impedance cardiogram, *Physiological Measurements*, vol.31, no.1, pp-13-33, 2010.

2. F. Liu, A. Trakic, H. Sanchez, E. Weber and S. Crozier, Reverse engineering of gradient coil designs based on experimentally measured magnetic fields and approximate knowledge of coil geometry-application in exposure evaluations, *Concepts in Magnetic Resonance*, vol 35B(1), pp.32-43, 2009.
3. J.H. Dou, L. Xia, Y. Zhang, G.F. Shou, Q. Wei, F. Liu and S. Crozier, Mechanical analysis of congestive heart failure caused by bundle branch block based on an electromechanical canine heart model, *Physics in Medicine and Biology*, vol. 54, no. 2, pp.353-372, 2009.
4. H. Sanchez, F. Liu, M. Poole, and S. Crozier, The equivalent magnetization current method applied to the design of gradient coils for MRI, *IEEE Transactions on Magnetics*, vol. 45, No 2, pp.767-775, 2009.
5. M. Jiang, L. Xia, G. Shou, Q. Wei, F. Liu and S. Crozier, Effect of cardiac motion on solution of the electrocardiography inverse problem, *IEEE Transactions on Biomedical Engineering*, vol.56, no.4, pp.923-931, 2009.
6. G. Shou, L. Xia, M. Jiang, F. Liu and S. Crozier, Solving the ECG forward problem by means of standard h- and h-hierarchical adaptive linear boundary element method: comparison with two refinement schemes, *IEEE Transactions on Biomedical Engineering*, vol. 56(5), pp.1454-1464, 2009.
7. M. Jiang, L. Xia, W. Huang, G. Shou, F. Liu and S. Crozier, The application of subspace preconditioned LSQR algorithm for solving the electrocardiography inverse problem, *Medical Engineering and Physics*, vol.31(8), pp.979-985, 2009.
8. Y. Li, F. Liu, E. Weber, B.K. Li and S. Crozier, Inverse design of a phased array coil for breast MRI, *Concepts in Magnetic Resonance (B)*, vol. 35B(4): pp.221-231, 2009.
9. B.K. Li, F. Liu, E. Weber, and S. Crozier, Hybrid numerical techniques for the modelling of radio-Frequency coils in magnetic resonance imaging, *NMR in Biomedicine*, vol. 22, no.9, pp.937-951, 2009.
10. A. Trakic, H. Wang, E. Weber, B.K. Li, M. Poole, F. Liu, S. Crozier, Image reconstructions with the rotating RF coil, *Journal of Magnetic Resonance*, vol. 201, no.2, pp. 186-198, 2009.
11. H. Wang, A. Trakic, F. Liu and S. Crozier, Numerical field evaluation of healthcare workers when bending towards high-field MRI magnets, *Magnetic Resonance in Medicine*, vol.59, no.2, pp.410-422, 2008.
12. A. Trakic, H.Wang, F. Liu, E. Weber, H. Sanchez, and S. Crozier, Minimizing induced fields in MRI occupational workers by lowering the imager in height, *Concepts in Magnetic Resonance (B)*, vol. 33B(1) pp.39-54, 2008.
13. H. Sanchez, F. Liu, E. Weber, and S. Crozier, Biplanar passive shim design and a shimming approach for open-type MRI magnets: II, *IEEE Transactions on Magnetics*, vol.44(3), pp.394-402, 2008.
14. G. Shou, L. Xia, Q. Wei, F. Liu and S. Crozier, Truncated total least square (TTLS): a new regularization method for the solution of ECG inverse problems, *IEEE Transactions on Biomedical Engineering*, vol.55(4), pp.1327-1335, 2008.
15. H. Wang, F. Liu, A. Trakic and S. Crozier, An improved Quasi-Static Finite-Difference scheme for induced field evaluation based on the biconjugate gradient method, *IEEE Transactions on Biomedical Engineering*, vol.55(7): pp.1800-1808, 2008.
16. H. Wang, A. Trakic, F. Liu, B.K. Li, E. Weber and S. Crozier, Parallel Solvers for Finite-Difference Modelling of Large-Scale, High-Resolution Electromagnetic Problems in MRI, *International Journal of Antennas and Propagation*, vol. 2008, Article ID 259703, 12 pages, 2008. doi:10.1155/2008/259703.
17. M. Zhu, L. Xia, F. Liu and S. Crozier, A deformation-space method for the design of biplanar transverse gradient coils in open MRI systems, *IEEE Transactions on Magnetics*, vol.44, no.8, pp.2035-2041, 2008.
18. M. Jiang, L. Xia, G. Shou, F. Liu and S. Crozier, Two hybrid regularization frameworks for solving the electrocardiography inverse problem, *Physics in Medicine and Biology*, vol.53, pp.5151-5164, 2008.
19. H. Wang, F. Liu, L. Xia, and S. Crozier, An efficient impedance method for induced field evaluation based on a stabilized bi-conjugate gradient algorithm, *Physics in Medicine and Biology*, vol.53, pp. 6363-6375, 2008.
20. A. Trakic, F. Liu, H. Wang, H. Sanchez and S. Crozier, Gradient z-coil design in the presence of eddy current, *Magnetic Resonance in Medicine*, vol. 57, 1119-1130, 2007.

21. H. Sanchez, F. Liu, A. Trakic and S. Crozier, A simple relationship for high efficiency-gradient uniformity trade-offs in multi-layer asymmetric gradient coils for MRI, *IEEE Transactions on Magnetics*, vol.43, no.2, pp.523-532, 2007.
22. H. Wang, A. Trakic, L. Xia, F. Liu and S. Crozier, An MRI-dedicated parallel FDTD scheme, *Concepts in Magnetic Resonance*, 31(B), pp. 147-161, 2007.
23. S. Crozier, H. Wang, A. Trakic, and F. Liu, Numerical evaluation of worker exposures to pulsed magnetic field gradient coils in MRI, *Journal of Magnetic Resonance Imaging*, vol. 26: 1236-1254, 2007.
24. S. Crozier, A. Trakic, H. Wang and F. Liu, Numerical study of currents in workers induced by body-motion around high-ultrahigh field MRI magnets, *Journal of Magnetic Resonance Imaging*, vol. 26: 1261-1277, 2007.
25. H. Sanchez, F. Liu, A. Trakic, E. Weber, and S. Crozier, Three-dimensional gradient coil structures for magnetic resonance imaging designed using fuzzy membership functions, *IEEE Transactions on Magnetics*, vol. 43, no.9, pp.3558-3566, 2007.
26. A. Trakic, F. Liu and S. Crozier, Transient temperature-rise in mouse due to low-frequency local hyperthermia, *Physics in Medicine and Biology*, vol.51, pp.1673-1691, 2006.
27. B.K. Li, B. Xu F. Liu and S. Crozier, Parallel imaging combined with transceive array phase-cycling for the amelioration of high field RF distortions – a model study, *Concepts in Magnetic Resonance*, vol.29B(2), pp.95-105, 2006.
28. Q. Wei, F. Liu, B. Appleton, L. Xia, N. Liu, S. Wilson, R. Riley, W. Strugnel, R. Slaughter and S. Crozier, Effect of cardiac motion on body surface electrocardiographic potentials: a MRI-based simulation study, *Physics in Medicine and Biology*, vol.51, pp3405-3418, 2006.
29. H. Wang, M.E. Bialkowski, F. Liu and S. Crozier, FDTD investigations into UWB radar technique of breast tumor detection and location, *African Journal of Information and Communication Technology*, vol.2, no.2, pp. 81-87, 2006.
30. A. Trakic, F. Liu and S. Crozier, Transient eddy current in MRI magnet due to gradient switching, *IEEE Transactions on Applied Superconductivity*, vol.16, no.3, pp.1924-1936, 2006.
31. L. Xia, M. Huo, Q.We, F. Liu and S. Crozier, Electrodynamics heart model construction and ECG simulation, *Methods of Information in Medicine*, 45(5): 564-573, 2006.
32. L. Xia, Y. Zhang, Q.We, F. Liu and S. Crozier, Simulation of Burgada syndrome using cellular and three-dimensional whole-heart modeling approaches, *Physiological Measurement*, vol.27, 1125-1142, 2006.
33. B. K. Li, F. Liu and S. Crozier, High Field Magnetic Resonance Imaging with Reduced Field/Tissue RF Artifacts – A Modeling Study Using Hybrid MoM/FEM and FDTD Technique, *IEEE Transactions on Electromagnetic Compatibility*, vol.48, no.4, pp.628-633, 2006.
34. F. Liu, B.L. Beck, B. Xu, J.R. Fitzsimmons, S.J. Blackband and S. Crozier, Numerical modeling of 11.1 T MRI of a human head using a MoM/FDTD method, *Concepts in Magnetic Resonance*, vol. 24B (1), pp. 28-38, 2005.
35. S. Crozier and F. Liu, Numerical evaluation of the fields induced by body motion in or near high-field MRI scanners, *Progress in biophysics and molecular biology*, vol.87, pp.267-278, 2005.
36. F. Liu, B.L. Beck, J.R. Fitzsimmons, S.J. Blackband and S. Crozier, A theoretical comparison of two optimization methods for radiofrequency drive schemes in high frequency MRI resonators, *Physics in Medicine and Biology*, vol. 50, pp. 5281-5291, 2005.
37. L. Xia, M. Huo, Q.We, F. Liu and S. Crozier, Analysis of cardiac ventricular wall motion based on a three-dimensional electromechanical biventricular model, *Physics in Medicine and Biology*, vol. 50(8), pp.1901-1917, 2005.
38. Q. Wei, F. Liu, L. Xia and S. Crozier, An object-oriented designed finite-difference time-domain simulator for electromagnetic analysis and design in MRI, *Journal of Magnetic Resonance*, vol.172, pp.222-230, 2005.
39. B.K. Li, F. Liu and S. Crozier, Focused, Eight-element transceive phased array coil for parallel magnetic resonance imaging of the chest-theoretical considerations, *Magnetic Resonance in Medicine*, vol.53, pp.1251-1257, 2005.

40. B. Xu, Q. Wei, F. Liu and S. Crozier, An inverse methodology for high frequency RF coil Design for MRI with de-emphasized B1 fields, *IEEE Transactions on Biomedical Engineering*, vol.52(9), pp.1582-1587, 2005.
41. F. Liu, S. Crozier, An FDTD model for calculation of gradient-induced eddy currents in MRI system, *IEEE Trans. Applied Superconductivity*, Vol.14, No.3, pp.1983-1989, 2004.
42. F. Liu and S. Crozier, An distributed magnetic current based FDTD method for the calculation of the eddy currents induced by gradient coils in MRI, *Journal of Magnetic Resonance*, Vol.169(2), pp.323-327, 2004.
43. F. Liu and S. Crozier, Electromagnetic fields inside a lossy, multi-layered spherical head phantom excited by MRI coils: models and methods, *Physics in Medicine & Biology*, vol.49, pp.1835-1851, 2004.
44. A. Trakic, F. Liu and S. Crozier, Numerical evaluation of thermal effects in rats due to high-field magnetic resonance imaging(0.5-1 GHz), *Physics in Medicine and Biology*, vol.49, pp.5547-5558, 2004.
45. F. Liu, L. Xia and X. Zhang, Analysis of the influence of the electrical asynchrony on regional mechanics of the infarcted left ventricle using electromechanical heart models, *JSME International Journal*, Vol.46A(1), pp.1-9, 2003.
46. H.W. Zhao, S. Crozier and F. Liu, A high-definition finite-difference time-domain method, *Applied Mathematical Modeling*, Vol.27 (5), pp.409-419, 2003.
47. H.W. Zhao, S. Crozier and F. Liu, A new approach to the solution of Maxwell's equations for low frequency and high-resolution biomedical problems. *The Australian & New Zealand Industrial & Applied Mathematics Journal*, Vol. 44(E), pp.C851-C867, 2003.
48. F. Liu, S. Crozier and H.W. Zhao, On the Electric field gradients in the human body for magnetic stimulation by gradient coils in MRI, *IEEE Transactions on Biomedical Engineering*, Vol.50, pp.804-815, 2003.
49. F. Liu, S. Crozier and H.W. Zhao, The calculation of the induced Electric-fields induced by human body movement in high-field MRI, *Journal of Magnetic Resonance*, Vol.61, pp.99-107, 2003.
50. F. Liu, L. Xia and S. Crozier, Magnetically induced E-fields and their influence on cardiac electric activities during MRI: a modeling study, *Magnetic Resonance in Medicine*, Vol.50, pp.1180-1188, 2003.
51. F. Liu, S. Crozier, H.W. Zhao and B. Lawrence, Finite-difference time-domain based studies of MRI pulsed field gradient-induced eddy currents inside the human body, *Concepts in Magnetic Resonance*, Vol.15B(1), pp.26-36, 2002.
52. H.W. Zhao, S. Crozier and F. Liu, A finite-difference time-domain (FDTD) method for modeling the effect of switched gradients on the human body in MRI, *Magnetic Resonance in Medicine*, Vol.48(6), pp.1037-1042, 2002.
53. F. Liu, W.X. Lu, L. Xia and G.H. Wu, The construction of three-dimensional composite finite element model of human left ventricle, *JSME International Journal*, Vol.41C(1), pp.125-133, 2001.

Journal Articles in Chinese:

54. L. Xia, M. Zhu, B. Xu, Q. Wei, F. Liu and S. Crozier, Evaluation of MRI RF fields inside a multilayered spherical head phantom using modified Dyadic Green's function/MoM method, *Journal of Zhejiang University*, 41(5), pp.87-876, 2007.
55. L. Xia, X.S. Ye, M. Huo and F. Liu, Simulation study of body surface ECG based on a dynamic heart model, *Chinese Journal of Biomedical Engineering*, vol.25(3), pp.257-262, 2006.
56. L. Xia and F. Liu, Analysis of the mechanical response of human left ventricle subjected to the active force, *Chinese Journal of Computational Mechanics*, vol. 19(4), pp.494-499, 2002.
57. G. Wu, F. Liu, L. Xia and W. Lu, The construction of composite finite element mechanical model of human left ventricle, *Chinese Journal of Biomedical Engineering*, vol. 21, pp.404-410, 2002.
58. F. Liu and W.X. Lu, The use of isoparametric transformation in the study of FE model of human heart, *ACTA BIOPHYSICA SINICA (Biophysics)*, No. 1, 2000.
59. F. Liu, G.Z. Xiao, L. Xia and W.X. Lu, Analysis of mechanical effect of myocardial infarction on left ventricular function based on heart model. *Progress in Natural Science*, vol. 10(11), pp.1018-1023, 2000.

60. F. Liu and W.X. Lu, Virtual heart studies and its applications, *Chinese Journal of Medical Instrument*, No. 2, 2000.
61. F. Liu and W.X. Lu, The simulation study of defecting myocardial pathological status based on virtual heart, *ACTA BIOPHYSICA SINICA (Biophysics)*, No. 3, 1999.
62. F. Liu, N.X. Cui and Q. Wei, A vector-based inverter controlled by double microcomputers, *Mechanical & Electrical Engineering*, No. 4, 1999.
63. F. Liu and Q. Wei, A kind of sensor-less vector controlled VVVF system, *Micro-motors & Servo Technique*, No. 1, 1999.
64. F. Liu and Q. Wei, A VVVF control system for industrial washing machine, *Power Electronics*, No. 5, 1999.
65. F. Liu and Q. Wei, A VF-SR constant-pressure water feed control system, *Electrical Automation*, No. 6, 1999.
66. F. Liu and W.X. Lu, The application of finite element method in human heart modeling, *Biomedical Engineering Abroad*, No. 3, 1999.
67. Y. M. Wang, Y.M. Wang and F. Liu, The segmentation of optic cup in eye funds image based on neural network, *Journal Basic Science & Engineering*, No. 3, 1998.

Conference papers

68. M. Zhu, G. Shou, L. Xia, F. Liu and S. Crozier, A finite-difference method for the design of biplanar transverse gradient coil in MRI, *The 4th International Conference on Bioinformatics and Biomedical Engineering (iCBBE 2010)*, Chengdu, China, June, 2010.
69. F. Liu, E. Weber, A. Trakic, H. Wang and S. Crozier, On the reduction of the transmit B1 non-uniformity and SAR using single-element rotating RF coil, *International Society for Magnetic Resonance in Medicine, 17th scientific meeting and exhibition*, Stockholm, Sweden, May, 2010.
70. J. Jin, F. Liu, Y. Li, E. Weber, and S. Crozier, Maxwell's Equation Tailored Reverse Method of Obtaining Coil Sensitivity for Parallel MRI, *International Society for Magnetic Resonance in Medicine, 17th scientific meeting and exhibition*, Stockholm, Sweden, May, 2010.
71. J. Chi, F. Liu, E. Weber, Y. Li, R. Wei, W. Xu, A. Trakic, H. Wang and S. Crozier, GPU accelerated FDTD solver and its application in B1-shimming, *International Society for Magnetic Resonance in Medicine, 17th scientific meeting and exhibition*, Stockholm, Sweden, May, 2010.
72. Y. Li, F. Liu, J. Jin, E. Weber, B. Li, H. Wang, and S. Crozier, A modelling study of a hybrid loop-strip coil structure for multichannel transceive breast array coil, *International Society for Magnetic Resonance in Medicine, 17th scientific meeting and exhibition*, Stockholm, Sweden, May, 2010.
73. Y. Li, E. Weber, B. Li, F. Liu, J. Schneider, S. Ohrel, S. Junge, P. Ullmann, M. Wick, and S. Crozier, A Stripline-like Coil Element Structure for High Field Phased Array Coils and its Application for a 8-channel 9.4T Small Animal Transceive Array, *International Society for Magnetic Resonance in Medicine, 17th scientific meeting and exhibition*, Stockholm, Sweden, May, 2010.
74. A. Trakic, H. Wang, E. Weber, B. Li, M. Poole, F. Liu, and S. Crozier, Time Division Multiplexed - Sensitivity Encoding (TDM-SENSE) with a mechanically rotating RF coil, *International Society for Magnetic Resonance in Medicine, 17th scientific meeting and exhibition*, Stockholm, Sweden, May, 2010.
75. H. Wang, A. Trakic, B. Li, F. Liu, and S. Crozier, Compressed sensing MRI with rotating RF Coil concept, *International Society for Magnetic Resonance in Medicine, 17th scientific meeting and exhibition*, Stockholm, Sweden, May, 2010.
76. M.S.H. Akhand, A. Trakic, F. Liu, S. Wilson, S. Crozier, Optimal tissue types in the thoracic electrical impedance model for thoracic electrical bioimpedance (TEB) studies, *31th Annual IEEE Engineering in Medicine and Biological Society*, vol.31, Minneapolis, September, 2009.
77. M.H. Zhu, L. Xia, G.F. Shou, F. Liu and S. Crozier, A deformation-space method for the design of spiral longitudinal biplanar gradient coils for open MRI systems, *Progress In Electromagnetics Research Symposium (PIERS) 2009*, Beijing, China, March, 2009.
78. H. Sanchez, M. Poole, F. Liu, S. Crozier, The EMC Method Applied to the Design of Local and Asymmetric Gradient Coils for MRI, *Compumag2009* Florianopolis, Brazil, Nov 2009.

79. H. Sanchez, F. Liu and S. Crozier, The Equivalent Magnetization Current Method applied to the design of gradient coils for MRI, *International Society for Magnetic Resonance in Medicine, 16th scientific meeting and exhibition*, Honolulu, USA, April 2009.
80. H. Sanchez, F. Liu, E. Weber, and S. Crozier, Evaluation of two shielding strategies, *International Society for Magnetic Resonance in Medicine, 16th scientific meeting and exhibition*, Honolulu, USA, April 2009.
81. A. Trakic, E. Weber, B.K. Li, S. Wilson, F. Liu, S. Crozier, A mechanically rotating RF transceive system and method for applications in magnetic resonance, *International Society for Magnetic Resonance in Medicine, 16th scientific meeting and exhibition*, Honolulu, USA, April 2009.
82. H. Wang, F. Liu, A. Trakic, B.K. Li, and S. Crozier, Numerical Evaluation of Induced Field by Body-motion around High Field MRI Magnets: A case study with an *Implanted Pacemaker*, *International Society for Magnetic Resonance in Medicine, 16th scientific meeting and exhibition*, Honolulu, USA, April 2009.
83. Y. Li, F. Liu, E. Weber, B.K. Li and S. Crozier, An Inverse Method for the Design of RF Array Coils with a Sparse Structure and Its Application for Breast Imaging, *International Society for Magnetic Resonance in Medicine, 16th scientific meeting and exhibition, Honolulu, USA, April 2009*.
84. Y. Li, Feng Liu, E. Weber, G.F. Shou, and S. Crozier, Theoretical Design of Phased Array RF Coils for Human Breast in MRI, *CMRMF & OCSMRM Joint Meeting, and ESMRMB Workshop (Chinese Society for Magnetic Resonance in Medicine, 2nd scientific meeting)2008*.
85. G.F. Shou, L. Xia, F. Liu, H. Sanchez, Y. Li, and S. Crozier, Boundary Element Based Method for the Design of Biplanar Transverse Gradient Coils, *CMRMF & OCSMRM Joint Meeting, and ESMRMB Workshop (Chinese Society for Magnetic Resonance in Medicine, 2nd scientific meeting), 2008*.
86. Y. Li, H. Wang, F. Liu, B.K. Li, G. Shou, E. Weber and S. Crozier, A comparison study of regularization techniques on phased array RF coil design in MRI, *30th Annual IEEE Engineering in Medicine and Biological Society*, vol.30, Vancouver, Canada, August, 2008.
87. H. S. Lopez, F. Liu and S. Crozier , The equivalent magnetizing method applied to the design of gradient coils for MRI, *30th Annual IEEE Engineering in Medicine and Biological Society*, vol.30, Vancouver, Canada, August, 2008.
88. E. Weber, B.K. Li, F. Liu and S. Crozier, A ultra high field multi-element transceive volume array for small animal MRI, *30th Annual IEEE Engineering in Medicine and Biological Society*, vol.30, Vancouver, Canada, August, 2008.
89. H. Wang, F. Liu, L. Xia and S. Crozier An efficient BiCGstab solved impedance method for induced field evaluation with a hyperthermia applicator, *30th Annual IEEE Engineering in Medicine and Biological Society*, vol.30, Vancouver, Canada, August, 2008.
90. F. Liu, H. Wang, A. Trakic and S. Crozier, EMF generated by the Static Magnetic field, *International Society for Magnetic Resonance in Medicine workshop on MR safety*, 13-14 July, 2008. (invited talk)
91. E. Weber, B.K. Li, F. Liu, Y. Li and S. Crozier, A novel 8-Channel transceive volume-array for a 9.4T Animal scanner, *International Society for Magnetic Resonance in Medicine, 16th scientific meeting and exhibition*, Toronto, Canada, May 2008.
92. H. Sanchez, F. Liu, E. Weber and S. Crozier, The Equivalent Magnetizing Current (EMC) method for biplanar active and passive shim, *International Society for Magnetic Resonance in Medicine, 16th scientific meeting and exhibition*, Toronto, Canada, May 2008.
93. H. Sanchez, F. Liu, E. Weber and S. Crozier, A new shimming approach using the Equivalent Magnetizing Current (EMC) method, *International Society for Magnetic Resonance in Medicine, 16th scientific meeting and exhibition*, Toronto, Canada, May 2008.
94. A. Trakic, F. Liu, H. Wang, and S. Crozier, Lower the imager significantly reduces the field exposure of MRI occupational workers, *International Society for Magnetic Resonance in Medicine, 16th scientific meeting and exhibition*, Toronto, Canada, May 2008.
95. F. Liu, A. Trakic, E. Weber, H. Sanchez and S. Crozier, Tailoring of gradient coils for numerical exposure evaluations based on experimentally measured B-field, *International Society for Magnetic Resonance in Medicine, 16th scientific meeting and exhibition*, Toronto, Canada, May 2008.

96. H. Wang, A. Trakic, F. Liu and S. Crozier, Numerical field evaluation of healthcare workers when bending towards high-field MRI magnets, *International Society for Magnetic Resonance in Medicine, 16th scientific meeting and exhibition*, Toronto, Canada, May 2008.
97. M. Zhu, F. Liu, L. Xia, A. Mehnert, H. Sanchez Lopez, Q. Wei, S. Crozier, J. Zhu, and Z. Jin, The Design of Planar Transverse Gradient Coils Using a Deformation Algorithm, *International Society for Magnetic Resonance in Medicine, 16th scientific meeting and exhibition*, Toronto, Canada, May 2008.
98. H. Wang, F. Liu, A. Trakic and S. Crozier, Parallel Computing Methods for Finite-difference Schemes in MRI Research, *Progress In Electromagnetics Research Symposium (PIERS) 2008*, Hangzhou, China, March, 2008.
99. H. Sanchez, F. Liu, E. Weber and S. Crozier, A Novel Method for Passive Shim Design: I, *Progress In Electromagnetics Research Symposium (PIERS) 2008*, Hangzhou, China, March, 2008.
100. H. Sanchez, F. Liu, E. Weber and S. Crozier, A Novel Method for Passive Shim Design II, *Progress In Electromagnetics Research Symposium (PIERS) 2008*, Hangzhou, China, March, 2008.
101. S. Padhi, H. Lui, N. and F. Liu, Detection of a Dielectric Target in a Half-space Using Extinction-pulse (E-pulse) Technique, *Progress In Electromagnetics Research Symposium (PIERS) 2008*, Hangzhou, China, March, 2008.
102. M. Zhu, F. Liu, L. Xia, A. Mehnert, H. Sanchez, Q. Wei, S. Crozier, J. Zhu, Z. Jin, C. Zhang, N. Cui, and W. Xu, The Design of Planar Transverse Gradient Coils Using a Deformation Algorithm, *Progress In Electromagnetics Research Symposium (PIERS) 2008*, Hangzhou, China, March, 2008.
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