

# Li-Wei Kuo, Ph.D.

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Li-Wei Kuo, Ph.D.

Associate Investigator

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## EDUCATION

- 2003/09 – **Ph.D.**  
2008/06 Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan (Supervisors: Prof. Jyh-Horng Chen and Prof. Wen-Yih I. Tseng)
- 2001/09 – **M.S.**  
2003/06 Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan (Supervisors: Prof. Jyh-Horng Chen and Prof. Wen-Yih I. Tseng)
- 1997/09 – **B.S.**  
2001/06 Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan

## EXPERIENCE

- 2021/02 – **Jointly Appointed Associate Professor**  
Present Institute of Biomedical Engineering, National Yang Ming Chiao Tung University, Hsinchu, Taiwan
- 2020/02 – **Jointly Appointed Assistant Professor**  
2021/01 Institute of Biomedical Engineering, National Chiao Tung University, Hsinchu, Taiwan
- 2019/07 – **Associate Investigator**  
Present Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Miaoli County, Taiwan
- 2016/08 – **Adjunct Assistant Professor**

- Present Institute of Medical Device and Imaging, National Taiwan University  
College of Medicine, Taipei, Taiwan
- 2013/07 – **Assistant Investigator**  
2019/06 Institute of Biomedical Engineering and Nanomedicine, National  
Health Research Institutes, Miaoli County, Taiwan
- 2011/09 – **Assistant Investigator**  
2013/06 Division of Medical Engineering Research, National Health Research  
Institutes, Miaoli County, Taiwan
- 2010/04 – **Visiting Fellow**  
2011/08 Advanced MRI Section, Laboratory of Functional and Molecular  
Imaging, National Institute of Neurological Disorders and Stroke,  
National Institutes of Health, Bethesda, USA (Supervisor: Dr. Jeff H.  
Duyn)
- 2009/06 – **Postdoctoral Research Fellow**  
2010/03 Advanced Biomedical Lab, Center for Optoelectronic Biomedicine,  
National Taiwan University College of Medicine, Taipei, Taiwan  
(Supervisor: Prof. Wen-Yih I. Tseng)

## HONORS & AWARDS

- 2021 **The ISMRM Summa Cum Laude Merit Award**, ISMRM & SMRT  
Annual Meeting & Exhibition, May 2021.
- 2020 **National Innovation Award**, Taipei, Taiwan
- 2020 **2020 NHRI Research Achievement Award for Young Scientist**,  
National Health Research Institutes, Miaoli County, Taiwan
- 2014 **National Invention and Creation Award**, Taipei, Taiwan
- 2010 – 2011 **Visiting Fellowship**, National Institute of Neurological Disorders and  
Stroke, National Institutes of Health, USA
- 2010 – 2011 **Postdoctoral Research Abroad Fellowship**, National Science  
Council, Taiwan
- 2006 **National Innovation Award**, Taipei, Taiwan
- 2005 **Honorable Mention Poster Award in Neuroimaging**, ISMRM 13th  
Annual Meeting, Miami, USA
- 2003 **Best Poster Award**, Radiological Society Republic of China Annual  
Meeting, Taipei, Taiwan
- 2002 **Best Poster Award (Biomedical Imaging)**, Conference on  
Biomedical Engineering Technology, Kaohsiung, Taiwan

## RESEARCH INTERESTS

### Medical Imaging

- MRI physics and methodology
- Brain neuroimaging

- Ultra-high field MRI
- MR system development

### **Biomedical Engineering**

- Biomedical signal and image processing
- Medical imaging instrumentations

## **PROFESSIONAL ACTIVITIES**

### **International Conferences and Societies**

- Session Moderator, The 4<sup>th</sup> ASMRM Annual Meeting, Taipei, Taiwan. (May 2022)
- Session Moderator, The 6<sup>th</sup> International Symposium on Radiation Education, Taipei, Taiwan. (Aug. 2021)
- Session Moderator, 2020 Annual TMRS Meeting on the Frontiers of Biological and Medicinal Magnetic Resonance, Taipei, Taiwan. (Dec. 2020)
- Session Moderator, 5<sup>th</sup> International Workshop on MRI Phase Contrast & Quantitative Susceptibility Mapping, Seoul, Korea. (Sept. 2019)

### **Editorial Services**

- Frontiers in Neuroscience / Brain Imaging Methods (Review Editor)
- Frontiers in Human Neuroscience (Review Editor)

### **Journal Reviewers**

- IEEE Transactions on Biomedical Engineering
- Journal of Magnetic Resonance Imaging
- Magnetic Resonance in Medicine
- NeuroImage
- Human Brain Mapping
- International Journal of Imaging Systems and Technology
- Frontiers in Neuroscience / Brain Imaging Methods
- Frontiers in Human Neuroscience
- PLOS One

### **Affiliations**

- Member, International Society for Magnetic Resonance in Medicine (ISMRM)
- Member, IEEE Engineering in Medicine and Biology Society (EMBS)
- Member, Taiwanese Society of Biomedical Engineering
- Member, Taiwan Magnetic Resonance Society

## **TEACHING**

- |      |   |
|------|---|
| 2020 | <b>Fundamentals of Biomedical Imaging (with Dr. Gin-Shin Chen)</b><br>Institute of Biomedical Engineering, National Chiao Tung University,<br>Hsinchu, Taiwan |
| 2017 | <b>Special Topics on Biomedical Signal and Image Processing</b><br>Institute of Medical Device and Imaging, National Taiwan University                        |

2016 College of Medicine, Taipei, Taiwan  
**Special Topics on Biomedical Signal and Image Processing**  
Institute of Medical Device and Imaging, National Taiwan University  
College of Medicine, Taipei, Taiwan

#### **GRUADUATE STUDENT SUPERVISED**

2020/04 **Shih-Yen Lin, Ph.D.**  
Institute of Computer Science and Engineering, College of Computer  
Science, National Chiao Tung University, Hsinchu, Taiwan (co-  
supervised with Prof. Yong-Sheng Chen)

#### **INVITED TALKS & LECTURES**

2022/05 "Functional Connectomics: State-of-the-Art Developments in  
Methodologies & Analysis Techniques," the 2022 Joint Annual  
Meeting ISMRM-ESMRMB & ISMRT 31<sup>st</sup> Annual Meeting, London, UK.

2021/08 "Advanced Diffusion MRI in Neurological and Neurodegenerative  
Diseases," the 6<sup>th</sup> International Symposium on Radiation Education,  
Taipei, Taiwan.

2020/11 "Brain Network Analysis on Neurodegenerative Disease and Cognitive  
Neuroscience Applications," the 2<sup>nd</sup> Annual Scientific Meeting of  
ASMRM & 8<sup>th</sup> International Congress on MRI & 25<sup>th</sup> Annual Scientific  
Meeting of KSMRM, Seoul, Korea.

2020/06 "MRI of Structural and Functional Connectome: Technical  
Development and Applications," the Ph.D. Program for Neural  
Regenerative Medicine, Taipei Medical University, Taipei, Taiwan.

2019/12 "Multi-scale Connectome MRI System Development and  
Applications," 2019 Taiwan Magnetic Resonance Society Annual  
Meeting, Academia Sinica, Taipei, Taiwan.

2019/12 "Multi-scale MRI System: Development and Applications," Graduate  
Institute of Biomedical Engineering, Chang Gung University, Taoyuan,  
Taiwan.

2019/08-12 Lecturer in MRI, Department of Medical Imaging, National Taiwan  
University Hospital, Taipei, Taiwan.

2019/04 "MRI of Structural and Functional Connectome: Technical  
Development and Applications," Lecture for PI Promotion, National  
Health Research Institutes, Miaoli County, Taiwan.

2019/01 "From Brownian motion to brain connective network: An  
introduction for diffusion MRI from a technical perspective," National  
Institute for Physiological Sciences, Okazaki, Japan.

2018/06 "Exploring Human Brain Networks with Advanced MR Neuroimaging  
Technology," Big Data in Health Sciences Conference, Taipei, Taiwan.

- 2017/10 "Integration of ultra-high-strength and multi-scale gradient systems on a whole-body 3T magnet for connectomics researches," Institute of neuroscience and medicine 4, Forschungszentrum Juelich, Juelich, Germany.
- 2017/04 "Investigation of Brain Structural and Functional Networks in Dementia by MR Neuroimaging," GIBMS, National Taiwan University, Taipei, Taiwan.
- 2016/05 "Mapping Brain Connective Network by MR Neuroimaging Techniques," IMDI, National Taiwan University, Taipei, Taiwan.
- 2016/04-05 Lecturer in MRI education, National Taiwan University Hospital, Taipei, Taiwan.
- 2016/03 "A High-Strength Gradient System for Facilitating Diffusion MRI on Brain Connectomics," the 4<sup>th</sup> International Congress on MRI 2016 & KSMRM, Seoul, Korea.
- 2015/12 "Mapping Brain Connective Network by MRI," 2015 NTU-Meiji Neurobiology and Cognitive Neuroscience Symposium, Taipei, Taiwan.
- 2015/12 "Mapping Brain Connectomics with MRI: Technical Development, Methods and Applications," BEBI, National Taiwan University, Taipei, Taiwan.
- 2015/11 "Development of Connectome MRI Techniques and Its Applications," IEO, National Taiwan Normal University, Taipei, Taiwan.
- 2015/11 "Mapping Brain Connective Network with MRI," CASTS, National Taiwan University, Taipei, Taiwan.
- 2015/06 "Introduction to MRI and Neuroscience," Symposium on Trends in Mind Sciences, National Tsing-Hua University, Hsinchu, Taiwan.
- 2014/11 "Mapping Brain Connectomics with MRI: Methods and Applications," 2014 NHRI-NTHU Joint Research Conference, NHRI, Miaoli, Taiwan.
- 2014/05 "Using Graphical Analysis to Investigate the Brain Connective Network," BMES, National Tsing-Hua University, Hsinchu, Taiwan.
- 2013/10 "Investigating Brain Connective Network with Graphical Analysis at Multiple Scales," CUBRIC, Cardiff University, Cardiff, UK.
- 2013/04 "Imaging the Brain Connective Network with MRI," School of Medical Informatics, Chungshan Medical University, Taichung, Taiwan.
- 2013/01 "Advanced Sampling Strategies of High Angular Resolution Diffusion MRI to Map Complex Fiber Orientations," 2013 Taiwan Magnetic Resonance Society Annual Meeting, National Chung Cheng University, Chiayi County, Taiwan.
- 2012/12 "Image the Brain Connective Network with MRI," Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan.
- 2012/10 "Brain MRI Techniques and Their Applications in Cognitive and

- Clinical Neuroscience,” Department of Foreign Languages and Literature, National Tsing-Hua University, Hsinchu, Taiwan.
- 2012/06 “Investigating the Dependence of Spontaneous Fluctuations in Visual Cortex on Callosal Connectivity,” Glimpse into the brain dynamism conference, Taipei, Taiwan.
- 2012/06 “Overview of MRI Development at NHRI,” Department of Electrical Engineering, National Cheng-Kung University, Tainan, Taiwan.
- 2012/05 “Overview of MRI Development at NHRI,” Chung San Medical University, Taichung, Taiwan.
- 2011/12 NSC Training Course: “Software for Functional MRI Analysis,” National Taiwan University, Taipei, Taiwan.
- 2011/11 “Investigating Brain Connectivity with Advanced MRI Techniques,” Institute of Biomedical Engineering, National Central University, Jhongli City, Taoyuan County, Taiwan.
- 2011/10 “Investigating Brain Connectivity with High-Field MRI,” Institute of Biomedical Engineering, National Yang-Ming University, Taipei, Taiwan.
- 2011/10 NSC Training Course: “NMR experiment and MRI Theory”, National Taiwan University, Taipei, Taiwan.
- 2009/09 “Diffusion spectrum MRI of complex neural fiber architecture,” National Institute of Neurological Disorders and Stroke, National Institute of Health, Bethesda, MD, USA.
- 2009/08 “Background, theory, and application of diffusion spectrum imaging,” Department of Radiology, Washington University in St. Louis, St. Louis, MO, USA.
- 2008/03 “Introduction to Radio-frequency Coils on MRI,” Institute of Neuroscience, National Yang-Ming University, Taipei, Taiwan.

## GRANTS

1. *“Deciphering Tissue Microstructure and Neural Connectivity of Postmortem Fetal Cerebellum with High-resolution Multi-contrast and Connectome MRI,”* 2022/8 – 2024/7, funded by Taiwan Ministry of Science and Technology. **Principal Investigator.**
2. *“Simulation and Experimental Validation of Implantable Medical Device in Magnetic Resonance Imaging System,”* 2021/6 – 2022/5, funded by Taiwan Ministry of Science and Technology. **Principal Investigator.**
3. *“Using Connectome MRI Techniques to Investigate the Lighting Effects on Brain Microstructures and Functions,”* 2020/8 – 2023/7, funded by Taiwan Ministry of Science and Technology. **Principal Investigator.**
4. *“Development of Multiple-contrast High-resolution Postmortem Fetal Brain MRI Database and Its Application on Early Detection of Cerebral Structural*

- Malformations,”* 2020/8 – 2022/7, funded by Taiwan Ministry of Science and Technology. **Principal Investigator.**
5. *“A Pilot Study of Ultra-high Field Magnetic Resonance Imaging (UHF-MRI) Technologies for Brain Neuroimaging and Cardiovascular Applications,”* 2019/8 – 2022/7, funded by Taiwan Ministry of Science and Technology. **Principal Investigator.**
  6. *“Exploring the Development of Cerebral Cortex and Neural Architecture across Species using Multiple-contrast High-resolution Ex Vivo MRI Techniques,”* 2019/8 – 2020/7, funded by Taiwan Ministry of Science and Technology. **Principal Investigator.**
  7. *“Multi-modal Motion Detection and Correction on MR Neuroimaging Techniques and Applications,”* 2018/8 – 2019/7, funded by Taiwan Ministry of Science and Technology. **Principal Investigator.**
  8. *“Photo-therapy of improving in the quality of sleep and health care for early-stage dementia patients: a novel LED application on health promotion,”* 2017/5 – 2019/4, funded by Taiwan Ministry of Health and Welfare. **Sub-project Principal Investigator.**
  9. *“Deciphering Structural Foundations and Functional Correlates of Cognitive Adaptation in Multiple Cultural Domains using MR Neuroimaging,”* 2017/1 – 2019/6, funded by Taiwan Ministry of Science and Technology. **Principal Investigator.**
  10. *“Exploring Complex Brain Structures using Ultrahigh Magnetic Field and Ultrahigh Gradient-Strength MRI,”* 2017/1 – 2019/3, funded by Taiwan Ministry of Science and Technology. **Principal Investigator.**
  11. *“Development of an MRI-guided Platform on Breast Applications,”* 2015/8 – 2018/7, funded by Taiwan Ministry of Science and Technology. **Principal Investigator.**
  12. *“Decoding Neuroperceptual Mechanisms of Vocal Emotion Expressions using Brain MR Neuroimaging and Speech Affective Computing,”* 2015/1 – 2016/12, funded by Taiwan Ministry of Science and Technology. **Principal Investigator.**
  13. *“Development of Diffusion Spectrum MRI with Compressive Sensing for Mapping High Resolution Brain Connective Network,”* 2014/8 – 2015/7, funded by Taiwan Ministry of Science and Technology. **Principal Investigator.**
  14. *“Improving the Resolution of Neural Fiber Orientation Mapping with Diffusion MRI by Graphene-based RF Coil,”* 2013/10 – 2014/9, funded by Taiwan Ministry of Science and Technology. **Principal Investigator.**
  15. *“Development of Next Generation MRI System Platform,”* 2013/1 – 2014/6, funded by Taiwan Ministry of Economic Affairs. **Sub-project Principal Investigator.**
  16. *“Spatial and Temporal Resolution Enhancement by Applying Wideband Technology on Functional MRI,”* 2013/3 – 2014/2, funded by Taiwan Ministry of

Health and Welfare. **Principal Investigator.**

## **PUBLICATIONS**

### **Journal Papers (\*corresponding author; †equal contribution)**

1. Jui-Hong Chien, I-Tzu Hung, Joshua Oon Soo Goh\*, **Li-Wei Kuo**\*, Wei-Wen Chang. Personal socio-cultural preferences modulate neural correlates of decisions to socialize with powerful persons. *Human Brain Mapping*, 2022;43:4422-4432, 1 October 2022, doi:10.1002/hbm.25963.
2. Sheau-Ling Lee, Michelle Hui-Hsin Lee, Kuo-Jen Wu, Chia-Wen Chiang, Yun-Xuan Chang, Jung-Da Fang, Hsin-Hui Tung, **Li-Wei Kuo**, Yun Wang. Post-ischemic protection of hepatocyte growth factor requires the type II transmembrane serine protease matriptase – A reciprocal regulation of the two for neuroprotection in stroke brain. *The FASEB Journal*, 2022;36:e22494, 17 August 2022, doi:10.1096/fj.202200414R.
3. Ta-Fu Chen, Sheng-Han Lee, Wan-Ru Zheng, Ching-Chou Hsu, Kuan-Hung Cho, **Li-Wei Kuo**, Charles C.-K. Chou, Ming-Jang Chiu, Boon Lead Tee, Tsun-Jen Cheng. White Matter Pathology in Alzheimer's Transgenic Mice with Chronic Exposure to Low-Level Ambient Fine Particulate Matter. *Particle and Fibre Toxicology*, 19(1):44, 30 June 2022, doi:10.1186/s12989-022-00485-8.
4. Yen-Hsuan Hsu, Sheng-Min Huang, Shih-Yen Lin, Jir-Jei Yang, Min-Chien Tu\*, **Li-Wei Kuo**\*. Prospective memory and default mode network functional connectivity in normal and pathological aging. *Journal of Alzheimer's Disease*, 86(2):753-762, 22 March 2022, doi:10.3233/JAD-215293.
5. Sabri Altunkaya†, Sheng-Min Huang†, Yen-Hsuan Hsu, Jir-Jei Yang, Chien-Yuan Lin, **Li-Wei Kuo**, Min-Chien Tu. Dissociable functional brain networks associated with apathy in subcortical ischemic vascular disease and Alzheimer's disease. *Frontiers in Aging Neuroscience*, 13:717037, 3 February 2022, doi:10.3389/fnagi.2021.717037.
6. Ezequiel Farrher\*†, Chia-Wen Chiang†, Kuan-Hung Cho, Farida Grinberg, Richard P. Buschbeck, Ming-Jye Chen, Kuo-Jen Wu, Yun Wang, Sheng-Min Huang, Zaheer Abbas, Chang-Hoon Choi, N. Jon Shah, **Li-Wei Kuo**\*. Spatiotemporal characterisation of ischaemic lesions in transient stroke animal models using diffusion free water elimination and mapping MRI with echo time dependence. *NeuroImage*, 244:118605, 1 December 2021, doi:10.1016/j.neuroimage.2021.118605.
7. Ying-Liang Larry Lai, Kuan Chen, Tzu-Wei Lee, Chao-Wei Tso, Hui-Hsien Lin, **Li-Wei Kuo**, Cheng-Yu Chen, Hua-Shan Liu. Effect of the APOE-ε4 allele on the cholinergic circuitry for subjects with different levels of cognitive impairment. *Frontiers in Neurology*, September 2021, doi:10.3389/fneur.2021.651388.
8. Sheng-Han Lee, Yi-Hsuan Chen, Chu-Chun Chien, Yuan-Horng Yan, Hsin-Chang Chen, Hsiao-Chi Chuang, Hui-I Hsieh, Kuan-Hung Cho, **Li-Wei Kuo**, Charles C.-K.



- Chou, Ming-Jang Chiu, Boon Lead Tee, Ta-Fu Chen, Tsun-Jen Cheng. Three Month Inhalation Exposure to Low-Level PM2.5 Induced Brain Toxicity in an Alzheimer's Disease Mouse Model. *PLoS One*, 16(8):e0254587, August 2021, doi:10.1371/journal.pone.0254587.
9. Xuan-Miao Zhuang, **Li-Wei Kuo**, Shih-Yen Lin, Jir-Jei Yang, Min-Chien Tu, Yen-Hsuan Hsu. Prospective memory and regional functional connectivity in subcortical ischemic vascular disease. *Frontiers in Aging Neuroscience*, 20 August 2021, doi:10.3389/fnagi.2021.686040.
  10. Chien-Feng Judith Huang, Win-Li Lin, San-Chao Hwang, Ching Yao, Hsu Chang, **Li-Wei Kuo\***. Anatomical phase extraction (APE) method: A Novel Method to Correct Detrimental Effects of Tissue-Inhomogeneity in Referenceless MR Thermometry – Preliminary Ex Vivo Investigation. *Computational and Mathematical Methods in Medicine*, vol. 2021, Article ID 5566775, 13 pages, August 2021, doi:10.1155/2021/5566775.
  11. Min-Chien Tu, Sheng-Min Huang, Yen-Hsuan Hsu, Jir-Jei Yang, Chien-Yuan Lin, **Li-Wei Kuo\***. Discriminating Subcortical Ischemic Vascular Disease and Alzheimer's Disease by Diffusion Kurtosis Imaging in Segregated Thalamic Regions. *Human Brain Mapping*, 42(7):2018-2031, May 2021, doi:10.1002/hbm.25342.
  12. **Li-Wei Kuo\***, Guo-Chung Dong\*, Chia-Ching Pan, Sheng-Fu Chen, Gin-Shin Chen. An MRI-guided ring high-intensity focused ultrasound system for noninvasive breast ablation. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, 67(9):1839-1847, September 2020, doi:10.1109/TUFFC.2020.2992764.
  13. Min-Chien Tu, Yen-Hsuan Hsu, Jir-Jei Yang, Wen-Hui Huang, Jie-Fu Deng, Shih-Yen Lin, Chien-Yuan Lin, **Li-Wei Kuo\***. Attention and functional connectivity among patients with early-stage subcortical ischemic vascular disease and Alzheimer's disease. *Frontiers in Aging Neuroscience*, 12:239, August 2020, doi:10.3389/fnagi.2020.00239.
  14. Ezequiel Farrher\*, Farida Grinberg, **Li-Wei Kuo\***, Kuan-Hung Cho, Richard P. Buschbeck, Ming-Jye Chen, Hsuan-Han Chiang, Chang-Hoon Choi, N. Jon Shah. Dedicated diffusion phantoms for the investigation of free water elimination and mapping: insights into the influence of T2 relaxation properties. *NMR in Biomedicine*, 33:e4210, April 2020, doi:10.1002/nbm.4210.
  15. Seong-Jin Yu, Kuo-Jen Wu, Eunkyung Bae, Yu-Syuan Wang, Chia-Wen Chiang, **Li-Wei Kuo**, Brandon K. Harvey, Nigel H. Greig, Yun Wang. Post-treatment with Posiphen reduces endoplasmic reticulum stress and neurodegeneration in stroke brain. *iScience*, 100866, February 2020, doi:10.1016/j.isci.2020.100866.
  16. Chia-Wen Chiang, Shih-Yen Lin, Kuan-Hung Cho, Kou-Jen Wu, Yun Wang, **Li-Wei Kuo\***. Effects of signal averaging, gradient encoding scheme, and spatial resolution on diffusion kurtosis imaging: An empirical study using 7T MRI. *Journal of Magnetic Resonance Imaging*, 50(5):1593-1603, November 2019, doi:10.1002/jmri.26755.

17. **Li-Wei Kuo**<sup>\*‡</sup>, Pei-Sheng Lin<sup>‡</sup>, Shih-Yen Lin, Ming-Fang Liu, Hengtai Jan, Hsin-Chien Lee, Sheng-Chang Wang<sup>\*</sup>. Functional Correlates of Resting-state Connectivity in the Default Mode Network of Heroin Users on Methadone Treatment and Medication-free Therapeutic Community Program. *Frontiers in Psychiatry*, 10:381, June 2019, doi:10.3389/fpsy.2019.00381.
18. Kuan-Hung Cho, Sheng-Min Huang, Chang-Hoon Choi, Ming-Jye Chen, Hsuan-Han Chiang, Richard P. Buschbeck, Ezequiel Farrher, N. Jon Shah, Ruslan Garipov, Ching-Ping Chang, Hsu Chang, **Li-Wei Kuo**<sup>\*</sup>. Development, integration and use of an ultra-high-strength gradient system on a human-size 3 T magnet for small animal MRI. *PLoS One*, 14(6):e0217916, June 2019, doi:10.1371/journal.pone.0217916.
19. Shih-Yen Lin, Chi-Chun Lee, Yong-Sheng Chen, **Li-Wei Kuo**<sup>\*</sup>. Investigation of functional brain network reconfiguration during vocal emotional processing using graph-theoretical analysis. *Social Cognitive and Affective Neuroscience*, 14(5):529-538, May 2019, doi:10.1093/scan/nsz025.
20. Hsin-Yi Tsai, Fang-Ci Su, Chun-Han Chou, Yu-Hsuan Lin, Kuo Cheng Huang, Yao-Joe Yang, **Li-Wei Kuo**, Lun-De Liao, Hsin-Su Yu. Wearable inverse lighting-emitting diode sensor for measuring light intensity at specific wavelengths in light therapy. *IEEE Transactions on Instrumentation and Measurement*, 68(5):1561-1574, March 2019, doi:10.1109/tim.2019.2899444.
21. Shih-Yen Lin, Chen-Pei Lin, Tsung-Jen Hsieh, Chung-Fen Lin, Sih-Huei Chen, Yi-Ping Chao, Yong-Sheng Chen, Chih-Cheng Hsu, **Li-Wei Kuo**<sup>\*</sup>. Multiparametric Graph Theoretical Analysis Reveals Altered Structural and Functional Network Topology in Alzheimer's Disease. *Neuroimage: Clinical*, 22:101680, January 2019, doi:10.1016/j.nicl.2019.101680.
22. Chi-Hsiang Shih, Jen-Kun Chen, **Li-Wei Kuo**, Kuan-Hung Cho, Ta-Chih Hsiao, Zhe-Wei Lin, Yi-Syuan Lin, Jiunn-Horng Kang, Yu-Chun Lo, Kai-Jen Chuang, Tsun-Jen Cheng, Hsiao-Chi Chuang. Chronic pulmonary exposure to traffic-related fine particulate matter causes brain impairment in adult rats. *Particle and Fibre Toxicology*, 15(1):44, November 2018, doi:10.1186/s12989-018-0281-1.
23. Kou-Jen Wu, Seong-Jin Yu, Chia-Wen Chiang, Yu-Wei Lee, B. Linju Yen, Pei-Chi Tseng, Chun-Sen Hsu, **Li-Wei Kuo**, Yun Wang. Neuroprotective action of human Wharton's jelly derived-mesenchymal stromal cell transplants in a rodent model of stroke. *Cell Transplantation*, 27(11):1603-1612, November 2018, doi:10.1177/0963689718802754.
24. Kou-Jen Wu, Seong-Jin Yu, Chia-Wen Chiang, Yu-Wei Lee, B. Linju Yen, Chun-Sen Hsu, **Li-Wei Kuo**, Yun Wang. Wharton's jelly mesenchymal stromal cell therapy for ischemic brain injury. *Brain Circulation*, 4(3):124-127, October 2018, doi:10.4103/bc.bc\_16\_18. (Review Article)
25. **Li-Wei Kuo**, Li-Chen Chiu, Win-Lin Lin, Jiun-Jung Chen, Guo-Chung Dong, Sheng-Fu Chen, Gin-Shin Chen. Development of a MRI-compatible high-intensity

- focused ultrasound phased array transducer dedicated for breast tumor treatment. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, 65(8):1423-1432, August 2018, doi:10.1109/TUFFC.2018.2841418.
26. Chi-Feng Su, Li-Hsun Chang, Chien-Yu Kao, Don-Ching Lee, Kuan-Hung Cho, **Li-Wei Kuo**, Hsu Chang, Yao-Horng Wang, Ing-Ming Chiu. Application of amniotic fluid stem cells in repairing sciatic nerve injury in minipigs. *Brain Research*, 1678:397-406, January 2018, doi:10.1016/j.brainres.2017.11.010.
  27. Yan-Jye Shyong, Mao-Hsien Wang, **Li-Wei Kuo**, Chang-Fu Su, Wei-Ting Kuo, Kuo-Chi Chang, Feng-Huei Lin. Mesoporous hydroxyapatite as a carrier of olanzapine for long-acting antidepressant treatment in rats with induced depression. *Journal of Controlled Release*, 255:62-72, June 2017, doi:10.1016/j.jconrel.2017.03.399.
  28. Meng-Chi Hsieh, **Li-Wei Kuo**, Yun-An Huang, Jyh-Horng Chen. Investigating Hyperoxic Effects in the Rat Brain Using Quantitative Susceptibility Mapping Based on MRI Phase. *Magnetic Resonance in Medicine*, 77(2):592-602, February 2017, doi:10.1002/mrm.26139.
  29. G. Russell Glenn, **Li-Wei Kuo**\*, Yi-Ping Chao, Chu-Yu Lee, Joseph A. Helpert, Jens H. Jensen\*. Mapping the Orientation of White Matter Fiber Bundles: A Comparative Study between Diffusion Tensor Imaging (DTI), Diffusional Kurtosis Imaging (DKI), and Diffusion Spectrum Imaging (DSI). *American Journal of Neuroradiology*, 37(7):1216-1222, July 2016, doi:10.3174/ajnr.A4714.
  30. Chao-Yu Shen, Yeu-Sheng Tyan, **Li-Wei Kuo**, Changwei W. Wu, Jun-Cheng Weng. Quantitative Evaluation of Rabbit Brain Injury after Cerebral Hemisphere Radiation Exposure Using Generalized q-Sampling Imaging. *PLoS One* 10(7):e0133001, July 2015, doi:10.1371/journal.pone.0133001.
  31. Wei-Chen Huang, Hsin-Yi Lai, **Li-Wei Kuo**, Chia-Hsin Liao, Po-Hsieh Chang, Ta-Chung Liu, San-Yuan Chen, You-Yin Chen. Multifunctional 3D Patternable Drug-Embedded Nanocarrier-Based Interfaces to Enhance Signal Recording and Reduce Neuron Degeneration in Neural Implantation. *Advanced Materials*, 27(28):4186-4193, July 2015, doi:10.1002/adma.201500136.
  32. Kou-Jen Wu, Seong-Jin Yu, Chia-Wen Chiang, Kuan-Hung Cho, Yu-Wei Lee, B. Linju Yen, **Li-Wei Kuo**\*, Yun Wang\*. Transplantation of human placenta-derived multipotent stem cells reduces ischemic brain injury in adult rats. *Cell Transplantation*, 24(3):459-70, March 2015, doi:10.3727/096368915X686922.
  33. Lun-De Liao, Aishwarya Bandla, Ji Min Ling, Yu-Hang Liu, **Li-Wei Kuo**, You-Yin Chen, Nicolas KK King, Hsin-Yi Lai, Yan-Ren Lin, Nitish V. Thakor. Improving Neurovascular Outcomes with Bilateral Forepaw Stimulation in a Rat Photothrombotic Ischemic Stroke Model. *Neurophotonics*, 1(1):011007, July 2014, doi:10.1117/1.NPh.1.1.011007.
  34. Hengtai Jan, Kuo-Ting Tsai, **Li-Wei Kuo**. Phase Locking Route behind Complex Periodic Windows in a Forced Oscillator. *Chaos*, 23(3):033126, September 2013, doi:10.1063/1.4818675.

35. Kuan-Hung Cho, **Li-Wei Kuo\***, Ching-Po Lin. Mapping Brain Connectomics from Brownian Motion: A Technical Review for Diffusion MRI. *Journal of Neuroscience and Neuroengineering*, 2:104-118, April 2013, doi:10.1166/jnsne.2013.1046. (Review Article)
36. **Li-Wei Kuo**, Wen-Yang Chiang, Fang-Cheng Yeh, Van J. Wedeen, Wen-Yih I. Tseng. Diffusion Spectrum MRI Using Body-centered-cubic and Half-sphere Sampling Schemes. *Journal of Neuroscience Methods*, 212(1):143-155, January 2013, doi:10.1016/j.jneumeth.2012.09.028.
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### **Conference Abstracts**

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3. Kuan-Hung Cho, Po-Hsun He, Ming-Jye Chen, Ezequiel Farrher, Nadim Jon Shah, Chang-Hoon Choi, **Li-Wei Kuo**. A simple, multi-purpose coil for improved mouse brain image quality and coverage at 3-T MRI. Proc 29th ISMRM Ann Meeting, May 2021 (virtual conference).
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### **Book Chapters**

1. Payton Lin, Yu Tsao and **Li-Wei Kuo**. The chapter “Controlling the Biocompatibility and Mechanical Effects of Implantable Microelectrodes to Improve Chronic Neural Recordings in the Auditory Nervous System,” in “An Excursus into Hearing Loss.” Ed. Hatzopoulos S. and Ciorba A., IntechOpen, 2018. DOI: 10.5772/intechopen.69828. ISBN 978-1-78923-213-4.
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### **Patents**

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