

Curriculum Vitae

1. Personal Record

Name	:	Loke Meng Heng
Address	:	115 Cangkat Minden Jalan 5, Minden Heights, 11700 Penang, Malaysia.
Contact details	:	Tel : +60 4 6574525, Fax : +60 4 6588437
Email	:	drmhloke@yahoo.com, drmhloke@gmail.com
Present Position	:	Company Director
Field of Specialisation	:	Exploration Geophysics (Goelectrical Methods)
Highest Degree	:	Ph.D.

2. Educational Record

University	Qualification	Date
Universiti Sains Malaysia	B.Sc. Hons.	July 1979
Universiti Sains Malaysia	M.Sc.	July 1982
The University of Birmingham (U.K.)	Ph.D.	Dec. 1994

3. Working Experience and Positions

Post	Organisation/Department	Date
Graduate Assistant	Universiti Sains Malaysia	1979 - 1981
Research Assistant	Universiti Sains Malaysia	1982
Temporary Lecturer	Universiti Sains Malaysia	1982 - 1984
Lecturer	Universiti Sains Malaysia	1984 - 1998
Associate Prof.	Universiti Sains Malaysia	1998 - 2007
Adjunct Prof.	Universiti Teknologi Petronas	2011
Director	Geotomo Software	2007 - 2014
Director	Geotomo Software Sdn. Bhd.	2007 - present
Director	Geotomo Software Pty Ltd (Australia)	2014 - 2017
Director	Geotomosoft Solutions (Malaysia)	2015 - 2017

4. Professional Membership

- 1). Society of Exploration Geophysicists - Member
- 2). European Association of Exploration Geophysicists - Member
- 3). Association of Computing Machinery - Member
- 4). Geological Society of Malaysia – Member
- 5). Australian Society of Exploration Geophysicists – Member
- 6). ASEG NSG Group Committee – Overseas representative

5. Editorial and review work for international journals and university rankings, supervision of post-graduate students

- 1). Associate Editor (Geoelectrics and Inversion), Near Surface Geophysics, EAGE (Impact Factor 1.123)
- 2). Editorial board member, Journal of Applied Geophysics, Elsevier (Impact Factor 1.327)
- 3). Reviewed over 100 journal papers for Geophysics, Journal of Applied Geophysics, Geophysical Prospecting, Near Surface Geophysics, Australian Journal of Soil Research, Mathematical Geology, Geophysical Journal International, Water Resources Research, Hydrology and Earth System Sciences, Vadose Zone Journal, Computers & Geosciences, Journal of Environmental & Engineering Geophysics, Journal of Geophysics and Engineering, Geophysical Research Letters, Exploration Geophysics.
- 4). Invited peer reviewer by Thomson Reuters for Times Higher Education World University Rankings
- 5). Invited peer reviewer by QS World University Rankings
- 6). University of South Florida (U.S.A.) – External co-supervisor for PhD student
- 7). Universidad Nacional de San Juan (Argentina) – External co-supervisor for PhD student
- 8). University of Western Australia – External co-supervisor for PhD student

6. Publications

ISI Journals (with 2012 Impact Factor)

- 1). Chong, C.S. and Loke, M.H., 1984. Gamma radiation source inside a gravity meter. *Exploration Geophysics*, **14**, 187. (IF 0.667)
- 2). Loke M.H. and Barker, R.D., 1995. Improvements to the Zohdy method for the inversion of resistivity sounding and pseudosection data. *Computers & Geoscience*, **21**, 321-332. (IF 1.834)
- 3). Loke M.H. and Barker, R.D., 1995. Least-squares deconvolution of apparent resistivity pseudosections. *Geophysics*, **60**, 1682-1690. (IF 1.723)
- 4). Andrews, R.J., Barker, R.D. and Loke, M.H., 1995, The application of electrical tomography in the study of the unsaturated zone in chalk at three sites in Cambridgeshire, U.K. *Hydrogeology Journal*, **3**, no. 4, 17-31. (IF 1.675)
- 5). Loke M.H. and Barker, R.D., 1996. Rapid least-squares inversion of apparent resistivity pseudosections by a quasi-Newton method. *Geophysical Prospecting*, **44**, 131-152. (IF 1.360)
- 6). Loke M.H. and Barker, R.D., 1996. Practical techniques for 3D resistivity surveys and data inversion. *Geophysical Prospecting*, **44**, 499-523. (IF 1.360)
- 7). Dahlin, T. and Loke, M. H., 1998. Resolution of 2D Wenner resistivity imaging as

- assessed by numerical modelling. *Journal of Applied Geophysics*, **38**, 237-249. (IF 1.327)
- 8). Nassir, S.S.A, Loke, M.H., Lee, C.Y. and Nawawi, M.N.M., 2000. Salt-water intrusion mapping by geoelectrical imaging surveys. *Geophysical Prospecting*, **48**, 647-662. (IF 1.360)
 - 9). Loke, M.H. and Dahlin, T., 2002. A comparison of Gauss-Newton and quasi-Newton methods in resistivity imaging inversion. *Journal of Applied Geophysics*, **49**, 149-162. (IF 1.327)
 - 10). Dahlin, T., Bernstone, C. and Loke, M.H., 2002, A 3D resistivity investigation of a contaminated site at Lernacken in Sweden. *Geophysics*, **60**, 1682-1690. (IF 1.723)
 - 11). Marescot, L., Loke, M.H., Chapellier, D., Delaloye, R., Lambiel, C. and Reynard, E., 2003. Assessing reliability of 2D resistivity imaging in mountain permafrost studies using the depth of investigation index method. *Near Surface Geophysics*, **1**, 57-68. (IF 1.123)
 - 12). Loke, M.H., Acworth, I. and Dahlin, T., 2003. A comparison of smooth and blocky inversion methods in 2D electrical imaging surveys. *Exploration Geophysics*, **34**, 182-187. (IF 0.667)
 - 13). White, R.M.S., Collins, S. and Loke, M.H., 2003. Resistivity and IP arrays, optimised for data collection and inversion. *Exploration Geophysics*, **34**, 229-232. (IF 0.667)
 - 14). Chambers, J.E, Loke, M.H., Ogilvy, R.D. and Meldrum, P.I., 2004. Non-invasive monitoring of DNAPL migration through a saturated porous medium using electrical impedance tomography. *Journal of Contaminant Hydrology*, **68**, 1-22. (IF 2.885)
 - 15). Loke, M.H. and Lane, J.W., 2004. Inversion of data from electrical resistivity imaging surveys in water-covered areas. *Exploration Geophysics*, **35**, 266-271. (IF 0.667)
 - 16). Nguyen, F, Pirard, E., Garambois, S, Jongmans, D. and Loke, M.H., 2005. Image processing of 2D resistivity data for imaging faults. *Journal of Applied Geophysics*, **57**, 260-277. (IF 1.327)
 - 17). Loke, M.H., Chambers, J.E. and Ogilvy, R. D., 2006. Inversion of 2-D spectral induced polarization imaging data. *Geophysical Prospecting*, **54**, 287-301. (IF 1.360)
 - 18). Tonkov, N. and Loke, M.H., 2006. A resistivity survey of a burial mound in the ‘Valley of the Thracian Kings’. *Archaeological Prospection*, **13**, 129-136. (IF 1.489)
 - 19). Linderholm, P., Marescot, L., Loke, M.H. and Renaud, P., 2008. Cell Culture Imaging Using Microimpedance Tomography. *IEEE Transactions on Biomedical Engineering*, **55**, 138-146. (IF 2.348)
 - 20). Sjö Dahl, P., Dahlin, T., Johansson, S. and Loke, M.H., 2008. Resistivity monitoring for leakage and internal erosion detection at Hällby embankment dam. *Journal of Applied Geophysics*, **65**, 155-164. (IF 1.327)
 - 21). Hilbich, C., Marescot, L., Hauck, C., Loke, M.H. and Mäusbacher, R., 2009. Applicability of ERT Monitoring to Coarse Blocky and Ice-rich Permafrost Landforms. *Permafrost and Periglacial Process*, **20**, 269-284. (IF 3.049)
 - 22). Loke, M.H., Wilkinson, P. and Chambers, J., 2010. Fast computation of optimized electrode arrays for 2D resistivity surveys. *Computers & Geosciences*, **36**, 1414-1426. (IF 1.834)
 - 23). Rucker, D., Loke, M.H., Levitt, M.T. and Noonan, G.E., 2010. Electrical Resistivity Characterization of an Industrial Site using Long Electrodes.

- Geophysics, **75**, WA95-WA104. (IF 1.723)
- 24). Loke, M.H., Wilkinson, P. and Chambers, J., 2010. Parallel computation of optimized arrays for 2-D electrical imaging. *Geophysical Journal International*, **183**, 1202-1315. (IF 2.420)
 - 25). Chambers, J.E., Wilkinson, P.B., Wealthall, G.P., Loke, M.H., Dearden, R., Wilson, R., Ogilvy, R.D., 2010. Hydrogeophysical Imaging of Deposit Heterogeneity and Groundwater Chemistry Changes during DNAPL Source Zone Bioremediation. *Journal of Contaminant Hydrology*, **118**, 43–61. (IF 2.885)
 - 26). Alfouzan, F.A., Loke, M.H. and Nawawi, M.N.M., 2010. An evaluation of optimization strategies to automatically select the optimal set of array configurations for 2D electrical imaging surveys. *Journal of Geophysics and Engineering*, **7**, 332-342. (IF 0.721)
 - 27). Rucker, D., Loke, M.H., Levitt, M.T. and Noonan, G.E., 2010. Electrical Resistivity Characterization of an Industrial Site using Long Electrodes. *Geophysics*, **75**, WA95-WA104. (IF 1.327)
 - 28). Rucker, D., Fink, J.B. and Loke, M.H., 2011. Environmental Monitoring of Leaks using Time Lapsed Long Electrode Electrical Resistivity. *Journal of Applied Geophysics*, **74**, 242-254. (IF 1.327)
 - 29). Rucker, D.F., Crook, N., Glaser, D. and Loke, M.H., 2012. Pilot-scale field validation of the long electrode electrical resistivity tomography method. *Geophysical Prospecting*, **60**, 1150-1166. (IF 1.360)
 - 30). Wilkinson, P.B., Loke, M.H., Meldrum, P.I., Chambers, J.E., Kuras, O., Gunn, D.A. and Ogilvy, R.D., 2012. Practical aspects of applied optimised survey design for Electrical Resistivity Tomography. *Geophysical Journal International*, **189**, 428-440. (IF 2.420)
 - 31). Chambers, J.E., Wilkinson, P.B., Wardrop, D., Hameed, A., Hill, I., Jeffrey, C., Loke, M.H., Meldrum, P.I., Kuras, O., Cave, M. and Gunn, D.A., 2012. Bedrock detection beneath river terrace deposits using three-dimensional electrical resistivity tomography. *Geomorphology*, **177-178**, 17-25. (IF 2.552)
 - 32). Loke, M.H., Chambers, J.E., Rucker, D. F., Kuras, O. and Wilkinson, P. B., 2013. Recent developments in the direct-current geoelectrical imaging method. *Journal of Applied Geophysics*, **95**, 135-156. (IF 1.327)
 - 33). Chambers, J.E., Wilkinson, P.B., Penn, S., Meldrum, P.I., Kuras, O., Loke, M.H. and Gunn, D.A., 2013. River terrace sand and gravel deposit reserve estimation using three-dimensional electrical resistivity tomography. *Journal of Applied Geophysics*, **93**, 25-32. (IF 1.327)
 - 34). Loke, M.H., Wilkinson, P. B., Chambers, P. B. and Strutt, M., 2014. Optimized arrays for 2-D cross-borehole electrical tomography surveys. *Geophysical Prospecting*, **62**, 172-189. (IF 1.360)
 - 35). Loke, M.H., Dahlin, T., Rucker, D.F., 2014. Smoothness-constrained time-lapse inversion of data from 3-D resistivity surveys. *Near Surface Geophysics*, **12**, 5-24. (IF 1.123) : [EAGE Ludger Mintrop Award 2015](#).
 - 36). Loke, M.H., P. B. Wilkinson, P.B., Uhlemann, S.S., Chambers, J.E. and Oxby, L. S., 2014. Computation of optimized arrays for 3-D electrical imaging surveys. *Geophysical Journal International*, **199**, 1751-1764. (IF 2.420)
 - 37). Loke, M.H., P. B. Wilkinson, P.B., Chambers, J.E., Uhlemann, S.S. and Sorensen, J.P.R, 2015. Optimized arrays for 2-D resistivity survey lines with a large number of electrodes. *Journal of Applied Geophysics*, **112**, 136-146. (IF 1.327)
 - 38). Wilkinson, P.B., Uhlemann, S., Chambers, J.C., Meldrum, P.I. and Loke, M.H., 2015. Development and testing of displacement inversion to track electrode

- movements on 3-D electrical resistivity tomography monitoring grids. *Geophys. J. Int.*, **200**, 1566–1581. (IF 2.420)
- 39). Wilkinson, P.B., Uhlemann, S., Meldrum, P.I. Chambers, J.C., Carrière, S., Oxby, L.S. and Loke, M.H., 2015. Adaptive time-lapse optimized survey design for electrical resistivity tomography monitoring. *Geophys. J. Int.*, **203**, 755-766. (IF 2.420)
 - 40). Loke, M.H., Kiflu, H., Wilkinson, P.B., Harro, D. and Kruse, S., 2015. Optimized arrays for 2-D resistivity surveys with combined surface and buried arrays. *Near Surface Geophysics*, **13**, 505-517. (IF 1.123)
 - 41). Dahlin, T. and Loke, M.H., 2015. Negative Apparent Chargeability in Time-domain Induced Polarisation Data. *Journal of Applied Geophysics*, **123**, 322-332. (IF 1.327)
 - 42). Wilkinson, P.B., Chambers, J.C., Uhlemann, S., Meldrum, P., Dixon, N. and Loke, M.H., 2016. Reconstruction of landslide movement time series by inversion of 4D electrical resistivity tomography monitoring data. *Geophysical Research Letters*, **43**, 1166-1174. (IF 4.456)
 - 43). Kiflu, H., Kruse, S., Loke, M.H., Wilkinson, P.B. and Harro, D., 2016. Improving resistivity survey resolution at sites with limited spatial extent using buried electrode arrays. *Journal of Applied Geophysics*, **135**, 338-355. (IF 1.327)
 - 44). Loke, M.H., Wilkinson, P.B., Chambers, J. E. and Meldrum, P.I., 2018. Rapid inversion of data from 2-D resistivity surveys with electrodes displacements. *Geophysical Prospecting*, **66**, 579-594. (IF 1.360)
 - 45). Dahlin, T. and Loke, M.H., 2018. Underwater ERT surveying in water with resistivity layering with example of application to site investigation for a rock tunnel in central Stockholm. *Near Surface Geophysics*, **16**, 230-237. (IF 1.123)
 - 46). Fathi, M.A., Loke, M. H., Nawawi, M. and Abdullah, K., 2018. Assessing the reliability and performance of optimized and conventional resistivity arrays for shallow subsurface investigations. *Journal of Applied Geophysics*, **155**, 237-245. (IF 1.327)

Books

- 1). Loke, M.H., 2011. Electrical resistivity surveys and data interpretation. in Gupta, H (ed.), *Solid Earth Geophysics Encyclopaedia (2nd Edition) “Electrical & Electromagnetic”* Springer-Verlag, 276-283.
- 2). Loke, M.H., Chambers, J.E. and Kuras, O., 2011. Instrumentation, electrical resistivity. in Gupta, H (ed.), *Solid Earth Geophysics Encyclopaedia (2nd Edition) “Electrical & Electromagnetic”*, Springer-Verlag, 599-604.

Other Journals

- 1). van Klinken, G.A., Lee, C.Y. and Loke, M.H., 1980. Satellite magnetic anomalies over South East Asia. *Warta Geologi*, **6**, 197-201.
- 2). Loke, M.H., Lee, C.Y. and Hasegawa, H., 1982. Preliminary report on a joint USM-CCOP regional gravity survey in North-West Peninsular Malaysia. *CCOP Newsletter*, **9**, no. 2, 10-11.
- 3). Loke, M.H., Lee, C.Y. and van Klinken, G.A., 1983. Interpretation of regional gravity and magnetic data in Peninsular Malaysia. *Bull. Geol. Soc. Malaysia*, **16**, 1-21.
- 4). Arafin, M.S., Lee, C.Y. and Loke, M.H., 1986. Kuantan-Kota Baharu gravity

traverse. *Sains Malaysiana*, **15**, 45-56.

- 5). Loke, M.H. and Lee, C.Y., 1988. Rapid Computation of IP sounding curves. *First Break*, **6**, 349-353.
- 6). Loke, M.H. and Lee, C.Y., 1988. Using the IBM PC for geophysical data analysis. *The Leading Edge*, **7**, no. 11, 36-39.

I have also presented over 50 papers at various conferences and seminars.

7. International Scientific Assessor for research proposals

- 1). de Boer, C.B., Jan. 2003. High resolution 3D electric resistivity imaging for hydro-geologic and geotechnical characterization. The Technology Foundation, Netherlands.
- 2). Reinhard, L., Sept. 2003. Experimental design and tomography using large 3D geoelectric arrays. ETH, Swiss Federal Institute of Technology Zurich.

8. Invited Speaker and Workshops Conducted

- 1). Loke, M.H., 1997. Workshop, Electrical Imaging surveys for environmental and engineering studies. Held in USM.
- 2). Barker, R.D. and Loke, M.H., 1999. The Theory and Practice of Electrical Imaging. Workshops of EEGS-ES Meeting, Budapest '99.
- 3). Loke, M.H., 2001. 2-D and 3-D inversion and modeling of surface- and borehole-resistivity data, United States Geological Survey, Connecticut, USA.
- 4). Loke, M.H., 2001. The use of electrical imaging surveys for mapping complex subsurface structures. Seminar Sehari - Kemajuan Terkini Geofizik Kejuruteraan (One day seminar – Latest developments in engineering geophysics), Universiti Kebangsaan Malaysia/Geol. Society Malaysia, Bangi, Malaysia.
- 5). Loke, M.H., 2002. Application of 2D and 3D DC methods for groundwater investigations, Institut de recherche pour le developpement (IRD), Montpellier, France.
- 6). Loke, M.H., 2004. Practical methods for electrical imaging surveys & interpretation - Held in USM. Short training course with participants from private companies.
- 7). Loke, M.H., 2004. Enhancing the interpretation of electrical imaging surveys. Geological Society of Malaysia. SEMINAR GEOFIZIK 2004, 2nd August 2004, ESSET, BANGI.
- 8). Loke, M.H., 2004. Electrical imaging surveys for hydrogeological, environmental and engineering studies. Geofluid 2004, Piacenza, Italy.
- 9). Loke, M.H., 2004. Electric Imaging of Subsurface and its Applications in Geosystem Engineering. Asian Institute of Technology, Bangkok, Thailand
- 10). Loke, M.H., 2007. Workshop on 2D and 3D electrical imaging surveys for WorleyParsons Komex, Calgary, Canada.
- 11). Loke, M.H., 2007. Workshop on 2D and 3D electrical imaging surveys for Areva Resources Canada Inc., Saskatoon, Canada.
- 12). Loke, M.H., 2009. Workshop on 2D and 3D electrical imaging surveys for Cemeco Inc., Saskatoon, Canada.
- 13). Loke, M.H., 2010. Workshop on 2D and 3D electrical imaging surveys (with special emphasis on aquatic surveys) for Fugro France, Paris, France.
- 14). Loke, M.H., 2010. Workshop on 2D and 3D electrical imaging surveys for Southern Geoscience Consultants, Perth, Australia.

- 15). Loke, M.H., 2012. Workshop on 2D and 3D electrical imaging surveys for AngloGoldAshanti, Perth, Australia.
- 16). Loke, M.H., 2015. 2-D and 3-D ERT surveys and data interpretation, Piedmont Regional Order of Geologists, Turin, Italy.
- 17). Loke, M.H., 2017. 2-D and 3-D ERT surveys and data interpretation, DRILLWELL Middle East DWC LLC, Dubai, UAE.
- 18). Loke, M.H., 2018. A practical guide to multi-dimensional ERT surveys and data interpretation. EAGE-HAGI First Asia Pacific Meeting on Near Surface Geoscience & Engineering, Yogyakarta, Indonesia.

9. Present work and research interests

I am presently the Director of Geotomo Software Sdn Bhd (Malaysia). It is a software company producing 2-D and 3-D inversion software for ERT (electrical resistivity tomography) surveys. The clients of the company range from universities and other academic institutions, engineering and environmental survey, groundwater and mineral exploration companies. A few of the companies are also involved in hydrocarbon exploration. The company has several thousand clients located in almost every country in the world; in North and South America, Europe, Asia, Australia-NZ-Oceania and Africa. More details are available on the www.geotomosoft.com web site.

I am currently involved in research work with the British Geological Survey, Lund University (Sweden), University of South Florida (USA), University of Western Australia and Aarhus University (Denmark). My present research interests are in fast 2-D and 3-D inversion methods for geoelectrical data, optimisation of electrode arrays for 2-D and 3-D surveys, time-lapse inversion techniques, fast numerical methods and applications of parallel programming techniques in geophysical modelling.



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(M.H. Loke, July 2018)