LOH Huanqian

Centre for Quantum Technologies and Department of Physics
National University of Singapore
3 Science Drive 2, Room S14-03-07, Singapore 117543

Phone: +65-6601 6193
Email: phylohh@nus.edu.sg
https://lohlab.quantumlah.org

ACADEMIC EXPERIENCE

President's assistant professor, Department of Physics and Centre for Quantum Technologies, National University of Singapore	2017-Present
Postdoctoral research fellow, Centre for Quantum Technologies, National University of Singapore and Massachusetts Institute of Technology (Martin Zwierlein's group)	2015-2017
Postdoctoral research fellow, Centre for Quantum Technologies, National University of Singapore (Dzmitry Matsukevich's group)	2013-2014
Ph.D. thesis, JILA, University of Colorado Thesis: Search for an Electron Electric Dipole Moment with Trapped Molecular Ions Advisor: Eric Cornell	2007-2013
Research officer, Data Storage Institute; joint appointment as research assistant, Centre for Quantum Technologies, National University of Singapore	2006-2007
S.B. thesis, Massachusetts Institute of Technology Thesis: Applications of Correlated Photon Pairs: Sub-Shot Noise Interferometry and Entanglement Advisor: Vladan Vuletić	2004-2006

EDUCATION

Ph.D. Physics, University of Colorado	2013
S.B. Physics, Massachusetts Institute of Technology	2006

SELECTED FELLOWSHIPS AND AWARDS

Singapore National Research Foundation Fellowship Five year fellowship, total award amount SGD$2.9 million	2018
MIT Pappalardo Postdoctoral Fellowship Competition, Finalist	2014
Harvard University Quantum Optics Center Prize Postdoctoral Fellowship Competition, Finalist	2014
LeRoy Apker Award for undergraduate thesis, American Physical Society Sole winner (representing MIT) amongst competing students from Ph.D.-granting institutions	2006
Malcolm Cotton Brown Award, MIT	2006
Agency for Science, Technology and Research (Singapore), Chairman's Honors List	2005, 2006
Josephine de Kármán Fellowship, Josephine de Kármán Foundation	2005

Top Prize, National Science Talent Search, Singapore 2001
Full scholarship for undergraduate and Ph.D. studies (accepted)

PUBLICATIONS

Highlights: 3 Science papers, 2 PRL Editors' Suggestions, 1 JCP Annual Editors' Choice

1. S. Ding, G. Maslennikov, R. Hablutzel, **H. Loh** and D. Matsukevich, "A quantum parametric oscillator with trapped ions", Physical Review Letters 119, 150404 (2017).
   Featured in CQT Highlights

2. J. W. Park, Z. Z. Yan, **H. Loh**, S. A. Will and M. W. Zwierlein, "Second-scale nuclear spin coherence time of trapped ultracold $^{23}Na^{40}K$ molecules", Science 357, 372 (2017).
   Featured in MIT News

3. S. A. Will, J. W. Park, Z. Z. Yan, **H. Loh** and M. W. Zwierlein, "Coherent microwave control of ultracold $^{23}Na^{40}K$ molecules", Physical Review Letters 116, 225306 (2016).

4. **H. Loh**, S. Ding, R. Hablutzel, G. Maslennikov and D. Matsukevich, "Zeeman-splitting-assisted quantum logic spectroscopy of trapped ions", Physical Review A 90, 061402(R) (2014).

5. S. Ding, **H. Loh**, R. Hablutzel, M. Gao, G. Maslennikov and D. Matsukevich, "Microwave control of trapped-ion motion assisted by a running optical lattice", Physical Review Letters 113, 073002 (2014).

6. K.-K. Ni, **H. Loh**, M. Grau, K. C. Cossel, J. Ye and E. A. Cornell, "Quantum-state detection of trapped HfF^+ by photodissociation", Journal of Molecular Spectroscopy 300, 12 (2014).

7. **H. Loh**, K. C. Cossel, M. Grau, K.-K. Ni, E. R. Meyer, J. L. Bohn, J. Ye and E. A. Cornell, "Precision spectroscopy of polarized molecules in an ion trap", Science 342, 1220 (2013).
   Featured in Science Perspective, ScienceDaily news and JILA news

8. **H. Loh**, R. P. Stutz, T. S. Yahn, H. Looser, R. W. Field and E. A. Cornell, "REMPI spectroscopy of HfF", Journal of Molecular Spectroscopy 276, 49 (2012).

9. M. Grau, A. E. Leanhardt, **H. Loh**, L. C. Sinclair, R. P. Stutz, T. S. Yahn and E. A. Cornell, "Near-infrared LIF spectroscopy of HfF", Journal of Molecular Spectroscopy 272, 32 (2012).

10. **H. Loh**, J. Wang, M. Grau, T. S. Yahn, R. W. Field, C. H. Greene and E. A. Cornell, "Laser-induced fluorescence studies of HfF^+ produced by autoionization", Journal of Chemical Physics 135, 154308 (2011).
    Editors' choice for year 2011

11. A. E. Leanhardt, J. L. Bohn, **H. Loh**, P. Maletinsky, E. R. Meyer, L. C. Sinclair, R. P. Stutz and E. A. Cornell, "High-resolution spectroscopy on trapped molecular ions in rotating electric fields: A new

approach for measuring the electron electric dipole moment", Journal of Molecular Spectroscopy 270, 1 (2011).
Top most cited article published in JMS since 2011

12. J. K. Thompson, J. Simon, **H. Loh** and V. Vuletić, "A high-brightness source of narrowband, identical photon pairs", Science 313, 74 (2006).

13. **H. Loh**, Y.-J. Lin, I. Teper, M. Cetina, J. Simon, J. K. Thompson and V. Vuletić, "Influence of grating parameters on the linewidths of external-cavity diode lasers", Applied Optics 45, 9191 (2006).

14. V. Chabanenko, R. Puzniak, A. Nabialek, S. Vasiliev, V. Rusakov, **L. Huanqian**, R. Szymczak, H. Szymczak, J. Jun, J. Karpinski and V. Finkel, "Flux Jumps and H-T Diagram of Instability for MgB_2", Journal of Low Temperature Physics 130**,** 175 (2003).

INVITED TALKS

1.	Institute of Physics Singapore (IPS) Meeting Plenary Talk, "Quantum control of ultracold dipolar molecules"	2018
2.	University of Connecticut, Department of Physics Seminar, "Quantum control of ultracold dipolar molecules"	2017
3.	University of Wisconsin, Department of Physics Seminar, "Quantum control of ultracold dipolar molecules"	2017
4.	University of Chicago, Institute for Molecular Engineering Seminar, "Quantum control of ultracold dipolar molecules"	2017
5.	MIT 'Rising Stars in Physics' Workshop, "Microwave control of ultracold molecules"	2016
6.	Hot Topics, Annual Meeting of the Division of Atomic, Molecular and Optical Physics (DAMOP), "Long-lived nuclear spin coherence in ultracold NaK molecules".	2016
7.	Gordon Research Seminar on Quantum Science, "Long-lived nuclear spin coherence in ultracold fermionic NaK molecules".	2016
4.	Harvard University, AMO Seminar, "Search for an electron electric dipole moment (eEDM) with trapped molecular ions".	2014
5.	Massachusetts Institute of Technology, AMO Seminar, "Search for an electron electric dipole moment (eEDM) with trapped molecular ions".	2013
6.	Max Planck Institute for Quantum Optics, AMO Seminar, "Search for an electron electric dipole moment (eEDM) with trapped molecular ions".	2013
7.	Center for Quantum Technologies, National University of Singapore, AMO Seminar, "Search for the electron electric dipole moment (eEDM)".	2009
8.	DCMP/GQI Prize Session, American Physical Society March Meeting, "Atoms in a cavity: a source of narrowband photon pairs".	2007

OUTREACH

1. Collaborator with artists-in-residence Otto Fong (cartoonist) and Eleanor Wong (playwright), Center for Quantum Technologies 2014
2. Volunteer for “CU Wizards” show: physics outreach to children aged 10-14 years old 2012
3. Research project supervisor and workshop instructor for students aged 14-16 years old, Scientist-in-School Program, Ministry of Education (Singapore) 2007