

# Ping-Yuan Lo (羅炳釐)

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## **Personal Information**

Date of Birth: Aug. 12, 1987

Nationality: Taiwan

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## **Area of Interest**

Excitonic physics and optical properties of 2D materials

Condensed matter physics

Quantum information science

Non-Markovian dynamics of open quantum systems

## **Computer Skills:**

Programing: C/C++ (advanced programmer), Mathematica (proficient)

Parallel computing: Message Passing Interface (MPI), OpenMP

Other tools: LaTeX, Microsoft Word, Powerpoint, Excel.

Operating system: Windows, Linux

## **Education**

2009 – 2016,

PhD, Department of Physics, National Cheng Kung University, Taiwan.

Thesis title: *Non-Markovian Dynamics in Photonic Systems*

Awarded Postgraduates Student Thesis Award from PSROC (2016).

2005 – 2009,

B. S., Department of Physics, National Cheng Kung University, Taiwan.

## **Professional Experiences:**

2021 – present,

Independent Research Fellow, Department of Electrophysics, National Yang Ming

Chiao Tung University, Taiwan

2016 – 2021,

Postdoc, Department of Electrophysics, National Chiao Tung University, Taiwan.

### **Scientific Activities:**

2022: three-month visit to University of Ottawa, Canada, working with Prof. Pawel Hawrylak on Berry curvature effects on trions in 2D semiconductors.

2019: one-month visit to University of Ottawa, Canada, working with Prof. Pawel Hawrylak on exciton physics in 2D materials.

2013: one-month visit to RIKEN, Japan, working with Prof. Franco Nori

### **Publications**

1. J. D. Lin, **P. Y. Lo**, G. H. Peng, W. H. Li, S. Y. Huang, G. Y. Chen and S. J. Cheng\*,  
*Essential role of momentum-forbidden dark excitons in the energy transfer responses of monolayer transition-metal dichalcogenides,*  
npj 2D mater. appl. **7**, 51 (2023)  
Impact Factor: N/A, Cited by: N/A (Web of Science), 0 (Google Scholar)
2. W. H. Li, J. D. Lin, **P. Y. Lo**, G. H. Peng, C. Y. Hei, S. Y. Chen and S. J. Cheng\*,  
*The Key Role of Non-Local Screening in the Environment-Insensitive Exciton Fine Structures of Transition-Metal Dichalcogenide Monolayers,*  
Nanomaterials **13**, 1739 (2023).  
Impact Factor: N/A, Cited by: N/A (Web of Science), 2 (Google Scholar)
3. M. C. Lin, **P. Y. Lo**, F. Nori and H. B. Chen\*,  
*Precession-induced nonclassicality of the free induction decay of NV centers by a dynamical polarized nuclear spin bath,*  
J. Phys.: Condens. Matter **34**, 505701 (2022)  
Impact Factor: 2.7, Cited by: 1 (Web of Science), 3 (Google Scholar)
4. G. H. Peng, O. J. G. Sanchez, W. H. Li, **P. Y. Lo** and S. J. Cheng\*,  
*Tailoring the superposition of finite-momentum valley exciton states in transition-metal dichalcogenide monolayers by using polarized twisted light,*  
Phys. Rev. B **106**, 155304 (2022)  
Impact Factor: 3.7, Cited by: 1 (Web of Science), 5 (Google Scholar)
5. **P. Y. Lo**, G. H. Peng, W. H. Li, Y. Yang and S. J. Cheng\*,  
*Full-zone valley polarization landscape of finite-momentum exciton in transition metal dichalcogenide monolayers,*  
Phys. Rev. Research **3**, 043198 (2021)  
Impact Factor: 4.2, Cited by: 4 (Web of Science), 9 (Google Scholar)

6. H. B. Chen<sup>\*</sup>, **P. Y. Lo**, C. Gneiting, J. Bae, Y. N. Chen<sup>†</sup> and F. Nori,  
*Quantifying the nonclassicality of pure dephasing.*  
Nat. Commun. **10**, 3794 (2019).  
Impact Factor: [12.121](#), Cited by: [31](#) (Web of Science), [38](#) (Google Scholar).
7. G. H. Peng, **P. Y. Lo**, W. H. Li, Y. C. Huang, Y. H. Chen, C. H. Lee, C. K. Yang  
and S. J. Cheng<sup>\*</sup>,  
*Distinctive signatures of the spin- and momentum-forbidden dark exciton states  
in the photo-luminescences of strained WSe<sub>2</sub> monolayers under thermalization.*  
Nano Lett. **19**, 2299 (2019).  
Impact Factor: [11.238](#), Cited by: [29](#) (Web of Science), [44](#) (Google Scholar).
8. H. B. Chen<sup>\*</sup>, C. Gneiting, **P. Y. Lo**, Y. N. Chen<sup>†</sup> and F. Nori,  
*Simulating open quantum systems with Hamiltonian ensembles and the  
nonclassicality of the dynamics.*  
Phys. Rev. Lett. **120**, 030403 (2018).  
Impact Factor: [9.227](#), Cited by: [39](#) (Web of Science), [57](#) (Google Scholar).
9. Md. M. Ali<sup>\*</sup>, **P. Y. Lo**, M. W. Y. Tu and W. M. Zhang<sup>†</sup>,  
*Non-Markovianity measure using two-time correlation functions,,*  
Phys. Rev. A **92**, 062306 (2015).  
Impact Factor: [2.765](#), Cited by: [40](#) (Web of Science), [49](#) (Google Scholar).
10. H. N. Xiong, **P. Y. Lo**, W. M. Zhang<sup>\*</sup>, D. H. Feng, and F. Nori  
*Non-Markovian Complexity in the Quantum-to-Classical Transition,*  
Sci. Rep. **5**, 13353 (2015).  
Impact Factor: [5.228](#), Cited by: [52](#) (Web of Science), [76](#) (Google Scholar).
11. **P. Y. Lo**, X. N. Xiong and W. M. Zhang<sup>\*</sup>,  
*Breakdown of Bose-Einstein distribution in photonic crystals,*  
Sci. Rep. **5**, 9423 (2015).  
Impact Factor: [5.228](#), Cited by: [22](#) (Web of Science), [38](#) (Google Scholar).
12. Md. M. Ali<sup>\*</sup>, **P. Y. Lo** and W. M. Zhang<sup>†</sup>,  
*Exact decoherence dynamics of 1/f noise,*  
New J. Phys. **16**, 103010 (2014).  
Impact Factor: [3.558](#), Cited by: [7](#) (Web of Science), [10](#) (Google Scholar).
13. W. M. Zhang<sup>\*</sup>, **P. Y. Lo**, H. N. Xiong, M. W. Y. Tu and F. Nori<sup>†</sup>,  
*General non-Markovian dynamics of open quantum systems,*  
Phys. Rev. Lett. **109**, 170402 (2012).  
Reply to comments: Phys. Rev. Lett. **115**, 168902 (2015).  
Erratum: Phys. Rev. Lett. **118**, 059902 (2017).  
Impact Factor: [7.943](#), Cited by: [238](#) (Web of Science), [327](#) (Google Scholar).