

Hoang Long Nguyen, PhD

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Education

PhD, Double degree (2019–2024)

Nanyang Technological University, Singapore & University of Groningen, Netherlands

B.Sc. with Honours (Highest Distinction) in Applied Physics (2015–2019)

Nanyang Technological University, Singapore

Research Experiences

▷ Research Fellow, Nanyang Technological University, Singapore (2024–present)

PI: Howe-Siang Tan

▷ PhD Student, Nanyang Technological University, Singapore & University of Groningen, Netherlands (2019–2024)

Supervisors: Howe-Siang Tan, Jasper Knoester, Thomas la Cour Jansen

Thesis title: Excitonic Energy Transfer Processes in Photosynthetic Systems studied with Two-dimensional Electronic Spectroscopy

▷ Project Officer, Nanyang Technological University, Singapore (2019)

Supervisor: Howe-Siang Tan

Project: Observing the Fluctuation Dynamics of Dative Bonds using 2D Electronic Spectroscopy

▷ Final year project, Nanyang Technological University, Singapore (2018–2019)

Supervisor: Howe-Siang Tan

Project: 2D Electronic Spectroscopy of Plant Photosynthetic Systems

▷ URECA Undergraduate Research, Nanyang Technological University, Singapore (2016–2017)

Supervisor: Lock Yue Chew

Project: Power Law Distribution in Balinese Subaks

Teaching Experiences

▷ Teaching Assistant, Nanyang Technological University

Duration: January 2020 to May 2023

Course: Chemistry and Biological Chemistry Laboratory for Undergraduates

Awards

- ▷ **Lab Teaching Assistant Achievement Award**, Nanyang Technological University, 2021
 - ▷ **NTU Research Scholarship**, Nanyang Technological University, 2019
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Presentations

Oral presentations:

- ▷ IDMxS Early-career Researcher Seminar, Singapore, May 2024
Title: "Observing natural light harvesting with two-dimensional ultrafast spectroscopy"
- ▷ 11th International Conference on Biological Physics, South Korea, August 2023
Title: "Inter-subunit energy transfer in plant photosystem II studied with ultrafast spectroscopy"
- ▷ Zernike Institute PhD Colloquium, Netherlands, September 2022
Title: "Spectroscopic studies of excitonic energy transfers in photosynthesis systems"

Poster presentations:

- ▷ 11th Coherent Multidimensional Spectroscopy Conference, UK, June 2024
 - ▷ Computational and Theoretical Chemistry Spring Symposium, Netherlands, April 2023
 - ▷ 12th Asian Conference on Ultrafast Phenomena, Singapore (online), January 2023
 - ▷ NWO CHAINS, Netherlands, September 2022
 - ▷ Hanseatic Workshop on Exciton Dynamics and Spectroscopy, Lithuania, August 2022
 - ▷ 10th Coherent Multidimensional Spectroscopy Conference, USA (online), June 2022
 - ▷ Vlieland Biennial Meeting, Netherlands, June 2022
 - ▷ Asian Spectroscopy Conference, Singapore, December 2020
 - ▷ 3rd Chemistry National Meeting, Singapore, October 2020
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Publications (citations: 168, h-index: 9)

1. H. L. Nguyen, K. Zhong, T. N. Do, P. Akhtar, P. H. Lambrev, T. L. C. Jansen, J. Knoester, S. Caffarri, H.-S. Tan, Directly Measuring the Connectivity between Isoenergetic Light-Harvesting Antennas in Plant Photosystem II at Physiological Temperature. *ChemRxiv* [Preprint] (2025).
2. S. Jana, S. Prasad, H. L. Nguyen, D. V. Le, H.-S. Tan, Correlated vibrational coherence and spectral diffusion analysis of multi-level systems using two-dimensional electronic spectroscopy. *J. Chem. Phys.* **162**, 164311 (2025).
3. K. Zhong, V. Erić, H. L. Nguyen, K. E. van Adrichem, G. A. H. ten Hoven, M. Manrho, J. Knoester, T. L. C. Jansen, Application of the Time-Domain Multichromophoric Fluorescence Resonant Energy Transfer Method in the NISE Programme, *J. Chem. Theory Comput.* **21**, 254–266 (2025).
4. K. Zhong, H.L. Nguyen, T.N. Do, H.-S. Tan, J. Knoester, T.L.C. Jansen, Coarse-Grained Approach to Simulate Signatures of Excitation Energy Transfer in Two-Dimensional Electronic Spectroscopy of Large Molecular Systems, *J. Chem. Theory Comput.* **20** (14), 6111-6124 (2024).
5. H.L. Nguyen, T.N. Do, K. Zhong, P. Akhtar, T.L.C. Jansen, J. Knoester, S. Caffarri, P.H. Lambrev, H.-S. Tan, Inter-subunit energy transfer processes in a minimal plant photosystem II supercomplex, *Sci. Adv.* **10**, eadh0911 (2024).
6. H.L. Nguyen, T.N. Do, E.G. Durmusoglu, M. Izmir, R. Sarkar, S. Pal, O.V. Prezhdo, H.V. Demir, H.-S. Tan, Measuring the Ultrafast Spectral Diffusion and Vibronic Coupling Dynamics in CdSe Colloidal

- Quantum Wells using Two-Dimensional Electronic Spectroscopy, *ACS Nano* **17**, 2411-2420 (2023).
- 7. K. Zhong, H.L. Nguyen, T.N. Do, H.-S. Tan S. J. Knoester, T.L.C. Jansen, An Efficient Time-Domain Implementation of the Multi-Chromophoric Förster Resonant Energy Transfer Method, *J. Chem. Phys.* **158**, 064103 (2023).
 - 8. T.N. Do, H.L. Nguyen, P. Akhtar, K. Zhong, T.L.C. Jansen, J. Knoester, S. Caffarri, P.H. Lambrev, H.-S. Tan, Ultrafast Excitation Energy Transfer Dynamics in the LHCII-CP29-CP24 Subdomain of Plant Photosystem II, *J. Phys. Chem. Lett.* **13**, 4263-4271 (2022).
 - 9. T.N. Do, H.L. Nguyen (co-first author), S. Caffarri, H.-S. Tan, Two-dimensional electronic spectroscopy of the Q_x to Q_y relaxation of chlorophylls a in Photosystem II core complex, *J. Chem. Phys.* **156**, 145102 (2022).
 - 10. H.L. Nguyen, T.N. Do, P. Akhtar, T.L.C. Jansen, J. Knoester, W. Wang, J.-R. Shen, P.H. Lambrev, H.-S. Tan, An Exciton Dynamics Model of Bryopsis Corticulans Light-Harvesting Complex II, *J. Phys. Chem. B* **125** (4), 1134-1143 (2021).
 - 11. T.N. Do, J.H.N. Sim, H.L. Nguyen, Y. Lu, H.-S. Tan, Observing the Fluctuation Dynamics of Dative Bonds Using 2D Electronic Spectroscopy, *J. Phys. Chem. Lett.* **12**, 165-170 (2021).
 - 12. X. Leng, T.N. Do, P. Akhtar, H.L. Nguyen, P.H. Lambrev, H.-S. Tan, Hierarchical Equations of Motion Simulation of Temperature-Dependent Two-Dimensional Electronic Spectroscopy of the Chlorophyll a Manifold in LHCII, *Chem. Asian J.* **15**, 1996-2004 (2020).
 - 13. T.N. Do, A. Huerta-Viga, P. Akhtar, H.L. Nguyen, P.J. Nowakowski, M. Faisal Khyasudeen, P.H. Lambrev, H.-S. Tan, Revealing the Excitation Energy Transfer Network of Light Harvesting Complex II by Phenomenological Analysis of Two-Dimensional Electronic Spectra, *J. Chem. Phys.* **151**, 205101 (2019).
 - 14. M. Faisal Khyasudeen, P.J. Nowakowski, H.L. Nguyen, J.H.N. Sim, T.N. Do, H.-S. Tan, Studying the Spectral Diffusion Dynamics of Chlorophyll a and Chlorophyll b using Two-Dimensional Electronic Spectroscopy, *Chem. Phys.* **527**, 110480 (2019).
 - 15. T.N. Do, A. Huerta-Viga, C. Zhang, P. Akhtar, P.J. Nowakowski, M. Faisal Khyasudeen, H.L. Nguyen, P.H. Lambrev, H.-S. Tan, Excitation Energy Transfer and Equilibration Process in LHCII Studied by Multidimensional Electronic Spectroscopy. *EPJ Web Conf.*, **205**, 09038 (2019). XXI International Conference on Ultrafast Phenomena 2018 (UP 2018).