

Curriculum Vitae



1. Name: Assoc. Prof. Dr. Somporn Chantara

2. **Organization:**

3.1 Chemistry Department, Faculty of Science, Chiang Mai University,

3.2 Environmental Science Research Center, Faculty of Science, Chiang Mai University

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3. **Professional Experiences:**

- Chair of Academic Center for Air Pollution (ACAir), CMU, 2019 - present
- Head of Environmental Science Research Center (ESRC), Faculty of Science, CMU, 2016- present

4. **Educations**

- B.S. (Chemistry), 1992 Chiang Mai University, Thailand
- M.S. (Environmental Risk Assessment for Tropical Ecosystems), international program, 1994, Chiang Mai University, Thailand
- Dr. rer. nat. (Biogeography), 2000, Trier University, Germany

6. Publications in ISI, Scopus databases (selected)

- 1) Kraisitnitikul P., Thepnuan D., Chansuebsri S., Yabueng N., Wiriya W., Saksakulkrai S., Shi Z., Chantara S. 2024. Contrasting compositions of PM_{2.5} in Northern Thailand during La Niña (2017) and El Niño (2019) years. *Journal of Environmental Sciences*. 135, 585-599.
- 2) Esquivel-Hernández G., Matiatos I. Sánchez-Murillo R. Vystavna Y., Balestrini R. Wells, N. Monteiro, L. R., Chantara, S., Walters, W., Wassenaar L. 2023. Nitrate isotopes ($\delta^{15}\text{N}$, $\delta^{18}\text{O}$) in precipitation: best practices from an international coordinated research project. *Isotopes in Environmental and Health Studies*. <https://doi.org/10.1080/10256016.2023.2177649>
- 3) Insian W., Yabueng N., Wiriya W., Chantara S*. 2022. Size-fractionated PM-bound PAHs in urban and rural atmospheres of northern Thailand for respiratory health risk assessment. *Environmental Pollution*. 293, 118488.
- 4) Chansuebsri S., Kraisitnitikul P., Wiriya W., Chantara S.* 2022. Fresh and aged PM_{2.5} and their ion composition in rural and urban atmospheres of Northern Thailand in relation to source identification. *Chemosphere*. 286, 131803.

- 5) Pani, S.K., Lin, N.-H., Griffith, S.M., Chantara, S., Lee, C.-T., Thepnuan, D., Tsai, Y.I. 2021. Brown carbon light absorption over an urban environment in northern peninsular Southeast Asia. *Environmental Pollution*. 276, 116735.
- 6) Akbari, M.Z., Thepnuan, D., Wiriya, W., Janta, R., Pansompong, P., Hemwan, P., Charoenpanyanet, A., Chantara, S*. 2021. Emission factors of metals bound with PM2.5 and ashes from biomass burning simulated in an open-system combustion chamber for estimation of open burning emission. *Atmospheric Pollution Research*. 12(3), 13-24.
- 7) Thepnuan, D., Yabueng, N., Chantara, S.*, Prapamontol, T., Tsai, Y.I. 2020. Simultaneous determination of carcinogenic PAHs and levoglucosan bound to PM2.5 for assessment of health risk and pollution sources during a smoke haze period. *Chemosphere*. 257,127154.
- 8) Yabueng, N., Wiriya, W., Chantara, S.* 2020. Influence of zero-burning policy and climate phenomena on ambient PM2.5 patterns and PAHs inhalation cancer risk during episodes of smoke haze in Northern Thailand. *Atmospheric Environment*. 232, 117485.
- 9) Pani, S.K., Wang, S.-H., Lin, N.-H., Chantara, S., Lee, C.-T., Thepnuan, D. 2020. Black carbon over an urban atmosphere in northern peninsular Southeast Asia: Characteristics, source apportionment, and associated health risks. *Environmental Pollution*, 259.
- 10) Chantara, S.*, Thepnuan, D., Wiriya, W., Prawan, S., Tsai, Y.I., 2019. Emissions of pollutant gases, fine particulate matters and their significant tracers from biomass burning in an open-system combustion chamber, *Chemosphere*, 224, 407-416.
- 11) Pani, S.K., Chantara, S.*, Khamkaew, C., Lee, C.-T., Lin, N.-H., 2019. Biomass burning in the northern peninsular Southeast Asia: Aerosol chemical profile and potential exposure. *Atmospheric Research*, 224, 180-195.
- 12) Thepnuan, D., Chantara, S.*, Lee, C.-T., Lin, N.-H., Tsai, Y.I., 2019. Molecular markers for biomass burning associated with the characterization of PM2.5 and component sources during dry season haze episodes in Upper South East Asia. *Science of the Total Environment*, 658, 708-722.
- 13) Tala, W. and Chantara, S.*, 2019. Use of spent coffee ground biochar as ambient PAHs sorbent and novel extraction method for GC-MS analysis. *Environmental Science and Pollution Research*, 26(13), 13025–13040.
- 14) Pansompong P. and Chantara S., 2018, Identification of potential sources of PM10 pollution from biomass burning in northern Thailand using statistical analysis of trajectories, *Atmospheric Pollution Research* 9, 1038-1051.
- 15) Pani S.K., Lin N.-H.*, Chantara S.*, Wang S.-H., Khamkaew C., Prapamontol T., Janjai S., 2018, Radiative response of biomass-burning aerosols over an urban atmosphere in northern peninsular Southeast Asia, *Science of the Total Environment*, 633, 892-911.
- 16) Janta R. and Chantara, S.* 2017. Tree bark as bioindicator of metal accumulation from road traffic and air quality map: A case study of Chiang Mai, Thailand. *Atmospheric Pollution Research* 8, 956-967.
- 17) Tsay S-C., Maring H. B., Lin, N-H., Buntoung S., Chantara S., Chuang H-C., Gabriel P.M., Goodloe C.S., Holben B. N., Hsiao T-C., Hsu N.C., Janjai S., Lau W.K.M., Lee C-T., Lee J.,

- Loftus A.M., Nguyen A.X., Nguyen C.M., Pani S.K., Pantina P., Sayer A.M., Tao W-K., Wang S-H., Welton E.J., Wiriya W., Yen M-C. 2016. Satellite-Surface Perspectives of Air Quality and Aerosol-Cloud Effects on the Environment: An Overview of 7-SEAS/BASELInE. *Aerosol and Air Quality Research* 16, 2581–2602.
- 18) Khamkaew C., Chantara S.*, Janta R., Pani S.K., Prapamontol T., Kawichai S., Wiriya W., Lin N.-H. 2016. Investigation of Biomass Burning Chemical Components over Northern Southeast Asia during 7-SEAS/BASELInE 2014 Campaign. *Aerosol and Air Quality Research*. 16(11), 2655-2670.
- 19) Wiriya W., Chantara S.*, Sillapapiromsuk S. and Lin N.H. 2016. Emission Profiles of PM10-Bound Polycyclic Aromatic Hydrocarbons from Biomass Burning Determined in Chamber for Assessment of Air Pollutants from Open Burning. *Aerosol and Air Quality Research*. 16(11), 2716-2727.
- 20) Pani S.K., Wang S.-H., Lin N.-H., Lee C.-T., Tsay S.-C., Holben B.N., Janjai S., Hsiao T.-C., Chuang M.-T., Chantara S. 2016. Radiative effect of springtime biomass-burning aerosols over northern indochina during 7-SEAS/BASELInE 2013 campaign. *Aerosol and Air Quality Research*. 16(11), 2802-2817.
- 21) Hsiao T.-C., Ye W.-C., Wang S.-H., Tsay S.-C., Chen W.-N., Lin N.-H., Lee C.-T., Hung H.-M., Chuang M.-T., Chantara S. 2016. Investigation of the CCN activity, BC and UVBC mass concentrations of biomass burning aerosols during the 2013 BASELInE campaign. *Aerosol and Air Quality Research*. 16(11), 2742-2756.
- 22) Pantina P., Tsay S.-C., Hsiao T.-C., Loftus A.M., Kuo F., Ou-Yang C.-F., Sayer A.M., Wang S.-H., Lin N.-H., Christina Hsu N., Janjai S., Chantara S., Nguyen A.X. 2016. COMMIT in 7-SEAS/BASELINE: Operation of and observations from a novel, mobile laboratory for measuring in-situ properties of aerosols and gases. *Aerosol and Air Quality Research*. 16(11), 2728-2741.
- 23) Sayer A.M., Christina Hsu N., Hsiao T.-C., Pantina P., Kuo F., Ou-Yang C.-F., Holben B.N., Janjai S., Chantara S., Wang S.-H., Loftus A.M., Lin N.-H., Tsay S.-C. 2016. In-situ and remotely-sensed observations of biomass burning aerosols at Doi Ang Khang, Thailand during 7-SEAS/BASELInE 2015. *Aerosol and Air Quality Research*. 16(11), 2786-2801.
- 24) Bootdee S., Chantara S.* and Prapamontol T. 2016. Determination of PM2.5 and polycyclic aromatic hydrocarbons from incense burning emission at shrine for health risk assessment. *Atmospheric Pollution Research*. 7(4), 680-689.
- 25) Tala W., Chantara S.*, Thiansem S. and Rayanakorn M. 2016. Development of low-cost passive sampler from cow bone char for sampling of volatile organic compounds. *International journal of Environmental Science and Technology*. 13(7), 1685-1696.
- 26) Walgraeve C., Chantara S., Sopajaree K., De Wispelaere P., Demeestere K., and Van Langenhove H. 2015. Quantification of PAHs and oxy-PAHs on airborne particulate matter in Chiang Mai, Thailand, using gas chromatography high resolution mass spectrometry. *Atmospheric Environment*. 107, 262-272.

- 27) Wang S.-H.*, Welton E.J., Holben B.N., Tsay S.C., Lin N.-H., Giles D., Stewart S.A., Janjai S., Nguyen X.A., Hsiao T.C., Chen W.N., Lin T.-H., Buntoung S., Chantara S. and Wiriya W., 2015. Vertical Distribution and Columnar Optical Properties of Springtime Biomass-Burning Aerosols over Northern Indochina during 2014 7-SEAS Campaign. *Aerosol and Air Quality Research*. 15, 2037–2050.
- 28) Lin N.-H., Sayer A.M., Wang S.-H., Loftus A.M., Hsiao, T.-C., Sheu G.-R., Hsu N.C., Tsay S.-C., Chantara S. 2014. Interactions between biomass-burning aerosols and clouds over Southeast Asia: Current status, challenges, and perspectives. *Environmental Pollution*. 195, 292-307.
- 29) Sillapapiromsuk S., Chantara S.*, Tengjaroenkul U., Prasitwattanaseree S. and Prapamontol T. 2013. Determination of PM10 and its ion composition emitted from biomass burning in the chamber for estimation of open burning emissions. *Chemosphere* 93, 1912-1919.
- 30) Khamkaew C., Chantara S.* 2013. Efficiency of a tailor made NO₂ passive sampler and correlations of NO₂, PM10 and PM10-bound NO₃⁻ in urban air of Chiang Mai (Thailand). *Chiang Mai Journal of Science* 40 (3), 386-400.
- 31) Wiriya W., Prapamontol T., Chantara S.* 2013. PM10-bound polycyclic aromatic hydrocarbons in Chiang Mai (Thailand): Seasonal variations, source identification, health risk assessment and their relationship to air-mass movement. *Atmospheric Research* 124, 109-122.
- 32) Chantara S.*, Sillapapiromsuk S., Wiriya W., 2012. Atmospheric pollutants in Chiang Mai (Thailand) over a five-year period (2005-2009), their possible sources and relation to air mass movement. *Atmospheric Environment* 60, 88-98.
- 33) Bootdee S., Chalemrom P., Chantara S.*, 2012. Validation and field application of tailor-made nitrogen dioxide passive samplers. *International Journal of Environmental Science and Technology* 9, 515-526.
- 34) Chantara S.*, Wangkarn S., Sangchan W. and Rayanakorn M. 2010. Spatial and Temporal Variations of Ambient PM10-bound Polycyclic Aromatic Hydrocarbons in Chiang Mai and Lamphun Provinces, Thailand. *Desalination and Water Treatment*. 19: 17-25.
- 35) Chantara S.*, Wangkarn S., Tengcharoenkul U., Sangchan W. and Rayanakorn M. 2009. Chemical Analysis of Airborne Particulates for Air Pollutants in Chiang Mai and Lamphun Provinces, Thailand. *Chiang Mai Journal of Science*, 36(2): 001-013.
- 36) Chantara S.* and Sangchan W. 2009. Sensitive analytical method for particle-bound polycyclic aromatic hydrocarbons; case study: Chiang Mai, Thailand. *ScienceAsia*. 35, 42-48.
- 37) Pengchai P., Chantara S., Sopajaree K., Wangkarn S., Tengcharoenkul U. and Rayanakorn M. 2009. Seasonal Variation, Risk Assessment and Source Estimation of PM10 and PM10-Bound PAHs in the Ambient Air of Chiang Mai and Lamphun, Thailand. *Environmental Monitoring and Assessment*. 154, 197-218.
- 38) Chantara S.* and Chunsuk N. 2008. Comparison of wet-only and bulk deposition at Chiang Mai (Thailand) based on rainwater chemical composition. *Atmospheric Environment*. 42, 5511-5518.

*Corresponding author

10. Number of publications and H-index (upto March 2023)

Scopus database:

- Publications: 87
- H-index = 26

11. **Expertizes:** Environmental chemistry; Air pollution; Air quality monitoring; Atmospheric chemistry; Biomass burning emission

12. Current research grants (PI)

- 1) Source-Control Scenarios and Evaluation of PM_{2.5} Concentration Management Measures in Chiang Mai Province. Funded by National Research Council of Thailand (NRCT), duration 1 year (March 2023 – February 2024).
- 2) Effects of atmospheric aerosols and biogenic VOCs on air quality and roles of plants on air pollution reduction. Funded under Fundamental Fund (FF), CMU, duration 1 year (2022).
- 3) CMU Model: initiative project for open burning and air pollution reduction. Funded by CMU, duration 1 year (2021).
- 4) Estimating sources and formation mechanism of secondary PM_{2.5} in Northern Thailand. Funded by National Research Council of Thailand (NRCT), duration 2 years (2021 - 2022).
- 5) Monitoring of Air Quality and Smoke Haze Situation in Upper Northern Thailand for Assessment of Health and Environmental Impacts. Funded by Thailand Research Fund (TRF), duration 2 years (2018 - 2020).
- 6) Monitoring of nitrogen isotopes in precipitation and atmospheric pollutant deposition in Northern Thailand (under F32008: Global Monitoring of Nitrogen Isotopes in Atmospheric Water). Funded by IAEA: International Atomic Energy Agency, Vienna, Austria and CMU, duration: 3 years (2018 - 2022).
- 7) Haze Free Thailand, funded by NRCT, 2 years (2018 - 2019).
- 8) Monitoring of Open Burning in Northern Thailand for Assessment of Air Pollutant Emission and Transport for Smoke Haze Management Planning. Funded by TRF, duration 2 years (2016-2017).