

Tuan V. Vu

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RESEARCH INTERESTS

My current research interests focus on sources and health effects of air pollution. I am also interested in numerical analysis, statistics and machine learning using R programming.

APPOINTMENTS

2016- now **Research Fellow**, University of Birmingham, UK
2013- 2016 **Marie Curie Early Researcher**, University of Birmingham, UK
2011- 2012 **Quality Production Leader**, Decathlon Co, Ltd., Vietnam
2009- 2011 **Research Assistant**, University of Ulsan, South Korea

EDUCATION

2013- 2016 **Ph.D.** Environmental Health, University of Birmingham, UK
 Thesis title: *Physical properties of particles and their implications for the calculation of the human regional lung dose*. Advisor: Prof. Roy Harrison
2009- 2011 **M.Sc.** Environmental Science, University of Ulsan, South Korea
 Thesis title: *Distribution, toxicity and sources of PAHs in size-resolved particles in the ambient air*. Advisor: Prof. Byeong-Kyu Lee
2004- 2008 **B.Sc.** Chemistry (**Honors program**), Vietnam National University, Vietnam

AWARDS, SCHOLARSHIPS & FELLOWSHIPS

Marie Curie Early Researcher Fellowship, University of Birmingham, UK 2013-2016
Best Paper Presentation Award, Brain Korea Program 21, 2010
Best Paper Award, the 5th International Forum on Strategic Technol. South Korea, 2010
Full master scholarship, University of Ulsan, South of Korea, 2009-2011
Scholarship for excellent students, Vietnam National University, 2004-2008
Certificate of the highest ranked student, Vietnam National University, 2004

PUBLICATIONS

Peer-reviewed journal articles

1. **Vu, T.V.**, Zauili-Sajani, S., Poluzzi, V., Harrison, R.M, 2018. Exposure to road traffic-generated particles by different metrics from outdoor into indoor environments (*accepted for publication on Air Quality, Atmosphere & Health*).
2. **Vu, T.V.**, Zauli-Sajani, S., Poluzzi, V., Delgado-Saborit, J.M., Harrison, R.M, 2017. Loss processes affecting submicrometre particles in a house heavily affected by road traffic emissions. *Aerosol Science & Technology*, 51(10), 1201-1211.
3. Masiol, M., Harrison, R.M., **Vu, T.V.**, Beddows, DCS, 2017. Sources of submicrometre particles near a major international airport. *Atmospheric Chemistry and Physics*, 17,12379-12403.

4. **Vu, T.V.**, Ondráček, J., Ždímal, V., Delgado-Saborit, J.M., Harrison, R.M, 2017. Physical properties and lung deposition of particles emitted from five major indoor sources. *Air Quality, Atmosphere & Health*, 10(1), 1-14.
5. Masiol, M., **Vu, T.V.**, Beddows, DCS., Harrison, R.M, 2016. Source apportionment of wide range particle size spectra and black carbon collected at the airport of Venice (Italy). *Atmospheric Environment*, 139, 56-74.
6. **Vu, T.V.**, Beddows, D.C.S, Delgado-Saborit, J.M., Harrison, R.M, 2016. Source apportionment of the lung dose of ambient submicrometre particulate matter. *Aerosol and Air Quality Research*, 16 (7), 1548-1557.
7. Fonseca, A.S., Talbot, N., Schwarz, J., Ondráček, J., Ždímal, V., Kozáková, J., Viana M., Karanasiou, A., Querol, X., Alastuey, A., **Vu, T.V.**, Delgado-Saborit, J.M., Harrison, R.M, 2016. Inter-comparison of four different cascade impactors for fine and ultrafine particle sampling in two European locations. *Published on Atmospheric Chemistry and Physics Discussion*. DOI: 10.5194/acp-2015-1016.
8. **Vu, T.V.**, Delgado-Saborit, J.M., Harrison, R.M, 2015. A review of particle number size distributions from seven major sources and implications for source apportionment studies. *Atmospheric Environment*, 122, 114-132.
9. **Vu, T. V.**, Delgado-Saborit, J.M., Harrison, R.M, 2015. A review of hygroscopic growth factors of submicron aerosols from different sources and its implication for calculation of lung deposition efficiency of ambient aerosols. *Air Quality, Atmosphere & Health*, 8 (5), 429 - 440.
10. **Vu, V-T.**, Lee, B-K., Kim, J-T., Lee, C-H., Kim, I-H, 2011. Assessment of carcinogenic risk due to inhalation of polycyclic aromatic hydrocarbons in PM₁₀ from an industrial city: A Korean case-study. *Journal of Hazardous Materials*, 189, 349-356.

Articles in progress

1. Wu, X., **Vu, T.V.**, Shi, Z., Harrison, R.M., Liu, D., Cen, K. Characterization and Source Apportionment of Organic Aerosols in China - A Review (*under revise*).
2. **Vu, T.V.**, Shi, Z., Harrison. Assessment of air quality improvements in Beijing under a five-year clean air action plan (2013-2017) [*in preparation for submission*].
3. Zongbo Shi, Ally Lewis, Oliver Wild, James Lee, Michael Holloway, Pete Edwards, Rachel Dunmore, Freya Squires, James Hopkins, Jacqui Hamilton, Andrew Rickard, **T.V. Vu**, Lisa Whalley, Dwayne Heard, Bill Bloss, Kebin He, Qiang Zhang, Pingqing Fu, Louisa Kramer, Di Liu, Roy Harrison. High ozone pollution as a new norm in developing megacities [*in preparation for submission*].
4. **T.V. Vu**, Leigh R. Crilley, Roy M. Harrison. Source apportionment and lung dose of high time and size-resolved particulate matter [*in preparation for submission*].

Book chapter & Conference papers

1. Lee, B-K and **Vu, V.T.**, 2010. Sources, distribution and toxicity of polyaromatic hydrocarbons (PAHs) in particular matter, *Air Pollution*, p. 99-122. *SCIYO*. ISBN: 978-953-307-143-5.
2. **Vu, V.T** and Lee, B-K, 2011. Elemental and organic carbon in PM₁₀ from urban and background areas in a typical industrial city, Korea. *Proceedings of the 11th Global Conference on Global Warming, Lisbon, Portugal*. p.1-8.
3. **Vu, V.T.**, Lee, B-K., Ny, M-T., Kim, J-T, 2010. A study on characteristics of organic carbon and polycyclic aromatic hydrocarbons (PAHs) in PM₁₀ at the residential and

industrial areas in Ulsan of Korea. *Proceedings of the 5th International Symposium on Strategic Technologies*, p. 263-266.

4. Lee, B-K., **Vu, V.T.**, Kim, J-T, 2010. Seasonal variation and source apportionment of polycyclic aromatic hydrocarbons (PAHs) in PM₁₀ in an industrial city, Korea. *Proceedings of A&WMA International Specialty Conference: Leapfrogging Opportunities for Air Quality Improvement, Xian, China*, p. 854-859.

Selected conferences presentations

1. Shi, Z., **Vu., T**, Liu, D., Harrison, R.M., Wu, X., Brean, J., Fu, P, 2017. The APHH China Research Programme: Chemical Composition and Source Apportionment of Particulate Matter in Beijing. **Oral presentation by T.Vu at AGU Fall Meeting, New Orleans, USA.**
2. Slate, E., Whalley, L., Woodward-Massey, R., Ye, C., Crilley, L., Krame,L., **Vu, T.**, Bloss, W., Squires, F., Dunmore,R., Lee, J., Heard D, 2017. Hydroxyl radical observations during the wintertime in Beijing and comparison with steady state model calculations. *AGU Fall Meeting, New Orleans, USA.*
3. Wu, X., Vu, **T.V.**, Shi, Z., Harrison, R.M., Liu, D., Cen, K, 2017. Molecular characterization of organic aerosols during haze days in winter at a rural site near to Beijing. *Aerosol Society Annual Conference, Birmingham, UK.*
4. **Vu, T.V.**, Zauli-Sajani, S., Poluzzi, V., Delgado-Saborit, J.M., Harrison, R.M, 2016. Loss processes affecting submicrometre particles in a house heavily affected by road traffic emissions. **Oral presentation at the UK Review Meeting on Outdoor and Indoor Air Pollution Research, Solihull, UK.**
5. **Vu, T.V.**, Delgado-Saborit, J.M., Sajani, S.Z, Harrison, R.M, 2016. Evaluation of a mass balance model for predicting the penetration, deposition and infiltration rate of submicron particles to the indoor environment. *The 4th UK & Ireland Exposure Science Conference, Buxton, UK.*
6. **Vu, T.V.**, Beddows, D.C.S., Sanderson, P., Delgado-Saborit, J.M., Olatunbosun, O., Crooks M., Harrison, R.M, 2015. An investigation into the particle size distribution collected from an automotive brake caliper test rig. *European Aerosol Conference (EAC), Milan, Italy.*
7. Fonseca, A.S., Talbot, N., Schwarz, J., Ondráček, J., Ždímal, V., Kozáková, J., Viana M., Karanasiou, A., Querol, X., Alastuey, A., **Vu, T.V.**, Delgado-Saborit, J.M., Harrison, R. M, 2015. Inter-comparison of four different cascade impactors for fine and ultrafine particle sampling in two European locations. *European Aerosol Conference (EAC), Milan, Italy.*
8. **Vu, T.V.**, Masiol, M., Harrison, R.M, 2014. Traffic and marine-influenced submicron particle number size distribution in the Venice mainland, Italy. *Aerosol Society Annual Conference, Birmingham, UK.*
9. **Vu, T.V.**, Delgado-Saborit J.M., Harrison, R.M, 2014. Regional lung dose of submicron aerosol particles in urban background, roadside and rural atmospheres. *International Aerosol Conference (IAC), Busan, South Korea.*
10. **Vu, T.V.**, Beddows D.C.S., Harrison, R.M, 2014. Source apportionment of submicron particles deposited in the human respiratory system measured at an urban background site in London. *Annual Review Meeting: Outdoor and Indoor Air Pollution Research, Solihull, UK.*

SKILLS & TRAININGS

Programming: R, Python

Statistics & Modelling technique: Multivariate analysis (PMF, K-means clustering), numerical modelling & machine learning. During my PhD, I developed a lung deposition model, indoor/outdoor mass balance model, coagulation model using R.

Advanced training courses: Atmospheric composition data analysis using R (*University of York, UK, Jan.2015, funded by NERC*); Mathematical modelling approaches to understanding environmental fate (*University of Birmingham, UK, Apr.2015, funded by HEXACOMM project*); Aerosol characteristics in modern microenvironments (*University of Helsinki, Finland, Jun.2015, funded by HEXACOMM project*); Techniques for monitoring exposure to aerosol (*University of Essex, UK, Mar.2014; Spanish National Research Council, Spain, Jun.2013, funded by HEXACOMM project*).

OTHER ACADEMIC ACTIVITIES

Visiting researcher: Spanish National Research Council (*Barcelona, Spain, Jul.2013*); University of Venice (*Venice, Italy, Apr.2014*); Norwegian Institute for Air Research (*Oslo, Norway, Nov.2014*), Institute of Chemical Process Fundamental (*Czech Academy of Sciences, Prague, Czech Republic, Feb.-Aug.2015*), Institute of Atmospheric Physics (*Chinese Academy of Science, Beijing, China, Nov.2016-Jul.2017*), Indian Institute of Technology Delhi (*India, Jan.2018*).

Member of the Aerosol Society

Reviewer for journals: Atmospheric Chemistry & Physics, npj Climate and Atmospheric Science, Particuology.

REFERENCES

Professor Roy M. Harrison, OBE, FRS

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Former Lecturer in Environmental Health, University of Birmingham, UK.
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