

# Jiali Shen

University of Helsinki | [jiali.shen@Helsinki.fi](mailto:jiali.shen@Helsinki.fi) | tel: +358 505560436 | <https://orcid.org/0000-0001-8701-7929>

<https://researchportal.helsinki.fi/en/persons/jiali-shen> | <https://github.com/Jialishen> | China

## RESEARCH PROFILE

---

Atmospheric scientist specialising in marine new particle formation and atmospheric chemistry, with a strong record of international collaboration through CLOUD at CERN and field campaigns. My research combines laboratory experiments, field observations, and kinetic modelling to investigate the atmospheric oxidation of biogenic and marine-emitted precursors and their role in particle formation. I have strong expertise in mass spectrometry (including API-TOF and Orbitrap) across various ionisation chemistries (e.g., nitrate, bromide), which supports high-resolution detection of atmospheric compounds in both laboratory and field studies. I led the development of the MARFORCE-flowtube model to simulate gas-phase oxidation and transport, and worked closely with international teams to integrate experimental results into kinetic models. My work aims to advance predictive understanding of how natural emissions influence atmospheric composition, aerosol formation, and cloud processes.

## Education

---

<b>University of Helsinki, Finland</b>	2018.05 – 2023.04
• PhD in Atmospheric Science (Distinction)	
<b>Zhejiang University, China</b>	2015.09 – 2018.03
• Master in Energy & Environmental Engineering (Entrance Exam Exemption)	
<b>Zhejiang University, China</b>	2011.09 – 2015.09
• Bachelor in Renewable Energy Science & Engineering	

## Professional Experience

---

<b>University Researcher</b> , Institute for Atmospheric and Earth system research/Helsinki Institute of Physics, University of Helsinki, Finland	2026.01 – present
<b>Postdoctoral Researcher</b> , Institute for Atmospheric and Earth system research/Helsinki Institute of Physics, University of Helsinki, Finland	2023.05 – 2025.12
<b>CLOUD Run coordinator</b> , CLOUD project coordinator for marine green runs, University of Helsinki and CERN	2022.04 – 2022.05 2023.10 – 2023.11
<b>Project coordinator</b> , project of Research and Maintenance of Air Quality during the G20 Hangzhou Summit, Zhejiang University	2015.07 – 2016.09

## Awards

---

Markku Kulmala award for an excellent PhD student, Finland	2022
National Scholarship for Graduate Excellence (1%), China	2018
First Class National Prize of University Contest on Energy Saving and Emission Reduction (1%), China	2014

## Fellowship

---

A Marie Skłodowska-Curie Early Stage Researcher Fellow (CLOUD-MOTION ITN), University of Helsinki	2018 – 2021
---	-------------

## Skills

---

- **Experimental techniques:** Over five years of hands-on experience in chamber experiments at CERN's CLOUD facility (approx. 3 months/year).
- **Field measurements:** Led and contributed to intensive campaigns at the Izaña Observatory (Spain) and Qvidja agricultural site (Finland), focusing on marine and biogenic particle formation.
- **Modelling development:** Developed the MARFORCE-flowtube model to simulate gas-phase chemical processes and transport dynamics.

- **Scientific collaboration:** Active in international workshops, schools, and secondments, including training at PSI, Aerodyne Research Inc. and other institutions.

## Key Publications

---

**Summary: Includes 4 first-author papers (including a Nature cover article), 1 co-first-author paper, and 1 corresponding-author paper.** \*Co-first; #Corresponding authors

1. R. Baalbaki\*, J. Shen\*, M. Simon, . . . , J. Kirkby, K. Lehtipalo#, X.-C. He#, Role of methanesulfonic acid in atmospheric particle formation. **Nature under review**, (2026).
2. J. Shen\*, D.M. Russell\*, J. DeVivo, . . . , J. Kirkby#, J. Curtius#, X.-C. He#, New particle formation from isoprene under upper tropospheric conditions. **Nature**, (2024).
3. J. Shen\*, W. Scholz, X.-C. He, P. Zhou, G. Marie, M. Wang, et al. High Gas-Phase Methanesulfonic Acid Production in the OH-Initiated Oxidation of Dimethyl Sulfide at Low Temperatures. **Environmental Science & Technology**, (2022).
4. J. Shen\*, A. Bigi, A. Marinoni, J. Lampilahti, J. Kontkanen, G. Ciarelli, et al. Emerging Investigator Series: COVID-19 lockdown effects on aerosol particle size distributions in northern Italy. **Environmental Science: Atmospheres**, (2021)
5. J. Shen\*, C. Zheng, L. Xu, Y Zhang, Y. Zhang, S. Liu, X. Gao. Atmospheric emission inventory of SO<sub>3</sub> from coal-fired power plants in China in the period 2009–2014. **Atmospheric Environment**, (2019)
6. X.-C. He#, J. Shen#, S. Iyer, P. Juuti, J. Zhang, M. Koirala, et al., Characterisation of the multi-scheme chemical ionisation inlet-2 and the detection of gaseous iodine species. **Atmospheric Measurement Techniques**, (2023).
7. W. Scholz\*, J. Shen\*, D. Aliaga, C. Wu, S. Carbone, I. Moreno et al. Measurement report: Long-range transport and the fate of dimethyl sulfide oxidation products in the free troposphere derived from observations at the high-altitude research station Chacaltaya (5240&thinsp;m&thinsp;a.s.l.) in the Bolivian Andes. **Atmospheric Chemistry and Physics**, (2023)

## Presentations

---

- New particle formation from isoprene in the upper troposphere. EAC, Talk & session co-chair, 2024.09  
 High production of MSA from OH-initiated DMS oxidation. Zhejiang University, Invited Seminar, 2023.08  
 Contribution of methanesulfonic acid to aerosol produced from DMS. ICNAA, Talk, 2023.07  
 Importance of quantitative data in field studies from Br-CIMS calibrations. VILMA workshop, Talk, 2022.09  
 The Yield of Methane sulfonic Acid and Sulphuric Acid from the Oxidation of DMS. EAC, Talk, 2021.09  
 CLOUD workshops. Talk, 2018-2024

## Teaching Experience

---

University of Helsinki

- |   |                        |
|---|------------------------|
| <b>Polar Oceans and Ice (2025), 5 ECTS</b>  | Guest Lecture & TA     |
| <b>Laboratory Aerosol Instrument Measurement (2024), 5 ECTS</b>   | Co-instructor (1 of 3) |
| Co-instructor responsible for the VOCUS PTR-MS component, covering operational principles, ion chemistry, calibration, and real-time data analysis in atmospheric measurements. |                        |
| <b>Formation and Growth of Atmospheric Aerosols (2024), 5 ECTS</b>  | Lead TA & Organizer    |
| <b>Advanced Analysis of Atmosphere–Surface Interactions and Feedbacks (2020)</b>  | Teaching assistant     |

## Pedagogical Training

---

- **Learning in higher education**, University of Helsinki, (5 ECTS, 2024)
- **Constructive Alignment in Course Design**, University of Helsinki, (5 ECTS, 2024)
- **Assessment of learning and giving feedback**, University of Helsinki, (5 ECTS, 2024)
- **Academic Supervision and Supervisor Training**, University of Helsinki, (5 ECTS, 2025)

## Outreach & Professional Development

---

### Peer Reviewer:

Atmospheric Chemistry and Physics, Environmental Science & Technology, Geophysical Research Letters

### Media Coverage:

Advanced Science News, 2024, Scientists identify the driver behind a mysterious particle cloud over the Amazon

Mirage News 2024, CLOUD Experiment Solves Upper Troposphere Aerosol Puzzle

Climate Science 2024, Amazon forests really are cloud machines (and the climate models had no idea)

## Supervision & Mentoring

---

Wenjuan Yu, Mentor for her doctoral study

2023.02 – present

## Full publications

---

The full list of publication can be found at

<https://scholar.google.com/citations?user=WD-cOdEAAAAAJhl=enoi=ao>

## References

---

1. Caudillo, L., Rörup, B., Heinritzi, M., Marie, G., Simon, M., Wagner, A. C., Müller, T., Granzin, M., Amorim, A., Ataei, F., Baalbaki, R., Bertozzi, B., Brasseur, Z., Chiu, R., Chu, B., Dada, L., Duplissy, J., Finkenzeller, H., Gonzalez Carracedo, L., . . . Curtius, J. (2021). Chemical composition of nanoparticles from  $\alpha$ -pinene nucleation and the influence of isoprene and relative humidity at low temperature. *Atmospheric Chemistry and Physics*, 21(22), 17099–17114. <https://doi.org/10.5194/acp-21-17099-2021>
2. Caudillo, L., Surdu, M., Lopez, B., Wang, M., Thoma, M., Bräkling, S., Buchholz, A., Simon, M., Wagner, A. C., Müller, T., Granzin, M., Heinritzi, M., Amorim, A., Bell, D. M., Brasseur, Z., Dada, L., Duplissy, J., Finkenzeller, H., He, X.-C., . . . Curtius, J. (2022). An intercomparison study of four different techniques for measuring the chemical composition of nanoparticles. *Atmospheric Chemistry and Physics*, 1–24. <https://doi.org/10.5194/acp-2022-498>
3. Ciarelli, G., Jiang, J., Haddad, I. E., Bigi, A., Aksoyoglu, S., Prévôt, A. S. H., Marinoni, A., Shen, J., Yan, C., & Bianchi, F. (2021). Modeling the effect of reduced traffic due to COVID-19 measures on air quality using a chemical transport model: Impacts on the Po Valley and the Swiss Plateau regions. *Environ. Sci.: Atmos.*, 1(5), 228–240. <https://doi.org/10.1039/D1EA00036E>
4. Dada, L., Okuljar, M., Shen, J., Olin, M., Wu, Y., Heimsch, L., Herlin, I., Kankaanrinta, S., Lampimäki, M., Kalliokoski, J., Baalbaki, R., Lohila, A., Petäjä, T., Maso, M. D., Duplissy, J., Kerminen, V.-M., & Kulmala, M. (2023). The synergistic role of sulfuric acid, ammonia and organics in particle formation over an agricultural land. *Environ. Sci.: Atmos.*, 3(8), 1195–1211. <https://doi.org/10.1039/D3EA00065F>
5. Finkenzeller, H., Iyer, S., He, X.-C., Simon, M., Koenig, T. K., Lee, C. F., Valiev, R., Hofbauer, V., Amorim, A., Baalbaki, R., Baccarini, A., Beck, L., Bell, D. M., Caudillo, L., Chen, D., Chiu, R., Chu, B., Dada, L., Duplissy, J., . . . Volkamer, R. (2023). The gas-phase formation mechanism of iodic acid as an atmospheric aerosol source. *Nat. Chem.*, 15(1), 129–135. <https://doi.org/10.1038/s41557-022-01067-z>
6. He, X.-C., Iyer, S., Sipilä, M., Ylisirniö, A., Peltola, M., Kontkanen, J., Baalbaki, R., Simon, M., Kürten, A., Tham, Y. J., Pesonen, J., Ahonen, L. R., Amanatidis, S., Amorim, A., Baccarini, A., Beck, L., Bianchi, F., Brilke, S., Chen, D., . . . Kulmala, M. (2021). Determination of the collision rate coefficient between charged iodic acid clusters and iodic acid using the appearance time method. *Aerosol Science and Technology*, 55(2), 231–242. <https://doi.org/10.1080/02786826.2020.1839013>
7. He, X.-C., Shen, J., Iyer, S., Juuti, P., Zhang, J., Koirala, M., Kytökari, M. M., Worsnop, D. R., Rissanen, M., Kulmala, M., Maier, N. M., Mikkilä, J., Sipilä, M., & Kangasluoma, J. (2023). Characterisation of gaseous iodine species detection using the multi-scheme chemical ionisation inlet 2 with bromide and nitrate chemical ionisation methods. *Atmospheric Measurement Techniques*, 16(19), 4461–4487. <https://doi.org/10.5194/amt-16-4461-2023>
8. He, X.-C., Simon, M., Iyer, S., Xie, H.-B., Rörup, B., Shen, J., Finkenzeller, H., Stolzenburg, D., Zhang, R., Baccarini, A., Tham, Y. J., Wang, M., Amanatidis, S., Piedehierro, A. A., Amorim, A., Baalbaki, R., Brasseur, Z., Caudillo, L., Chu, B., . . . Kulmala, M. (2023). Iodine oxoacids enhance nucleation of sulfuric acid particles in the atmosphere. *Science*, 382(6676), 1308–1314. <https://doi.org/10.1126/science.adh2526>

9. He, X.-C., Tham, Y. J., Dada, L., Wang, M., Finkenzeller, H., Stolzenburg, D., Iyer, S., Simon, M., Kürten, A., Shen, J., Rörup, B., Rissanen, M., Schobesberger, S., Baalbaki, R., Wang, D. S., Koenig, T. K., Jokinen, T., Sarnela, N., Beck, L. J., . . . Sipilä, M. (2021). Role of iodine oxoacids in atmospheric aerosol nucleation. *Science*, 371(6529), 589–595. <https://doi.org/10.1126/science.abe0298>
10. Li, D., Huang, W., Wang, D., Wang, M., Thornton, J. A., Caudillo, L., Rörup, B., Marten, R., Scholz, W., Finkenzeller, H., Marie, G., Baltensperger, U., Bell, D. M., Brasseur, Z., Curtius, J., Dada, L., Duplissy, J., Gong, X., Hansel, A., . . . Riva, M. (2024). Nitrate Radicals Suppress Biogenic New Particle Formation from Monoterpene Oxidation. *Environ. Sci. Technol.*, 58(3), 1601–1614. <https://doi.org/10.1021/acs.est.3c07958>
11. Marten, R., Xiao, M., Rörup, B., Wang, M., Kong, W., He, X.-C., Stolzenburg, D., Pfeifer, J., Marie, G., Wang, D. S., Scholz, W., Baccarini, A., Lee, C. P., Amorim, A., Baalbaki, R., Bell, D. M., Bertozzi, B., Caudillo, L., Chu, B., . . . Haddad, I. E. (2022). Survival of newly formed particles in haze conditions. *Environ. Sci.: Atmos.*, 2(3), 491–499. <https://doi.org/10.1039/D2EA00007E>
12. Marten, R., Xiao, M., Wang, M., Kong, W., He, X.-C., Stolzenburg, D., Pfeifer, J., Marie, G., Wang, D. S., Elser, M., Baccarini, A., Lee, C. P., Amorim, A., Baalbaki, R., Bell, D. M., Bertozzi, B., Caudillo, L., Dada, L., Duplissy, J., . . . El Haddad, I. (2024). Assessing the importance of nitric acid and ammonia for particle growth in the polluted boundary layer. *Environ. Sci.: Atmos.*, 4(2), 265–274. <https://doi.org/10.1039/D3EA00001J>
13. Olin, M., Okuljar, M., Rissanen, M. P., Kalliokoski, J., Shen, J., Dada, L., Lampimäki, M., Wu, Y., Lohila, A., Duplissy, J., Sipilä, M., Petäjä, T., Kulmala, M., & Dal Maso, M. (2022). Measurement report: Atmospheric new particle formation in a coastal agricultural site explained with binPMF analysis of nitrate CI-API-TOF spectra. *Atmospheric Chemistry and Physics*, 22(12), 8097–8115. <https://doi.org/10.5194/acp-22-8097-2022>
14. Rörup, B., He, X.-C., Shen, J., Baalbaki, R., Dada, L., Sipilä, M., Kirkby, J., Kulmala, M., Amorim, A., Baccarini, A., Bell, D. M., Caudillo-Plath, L., Duplissy, J., Finkenzeller, H., Kürten, A., Lamkaddam, H., Lee, C. P., Makhmutov, V., Manninen, H. E., . . . Lehtipalo, K. (2024). Temperature, humidity, and ionisation effect of iodine oxoacid nucleation. *Environ. Sci.: Atmos.*, 4(5), 531–546. <https://doi.org/10.1039/D4EA00013G>
15. Scholz, W., Shen, J., Aliaga, D., Wu, C., Carbone, S., Moreno, I., Zha, Q., Huang, W., Heikkinen, L., Jaffrezo, J. L., Uzu, G., Partoll, E., Leiminger, M., Velarde, F., Laj, P., Ginot, P., Artaxo, P., Wiedensohler, A., Kulmala, M., . . . Hansel, A. (2023). Measurement report: Long-range transport and the fate of dimethyl sulfide oxidation products in the free troposphere derived from observations at the high-altitude research station Chacaltaya (5240 a.s.l.) in the Bolivian Andes. *Atmospheric Chemistry and Physics*, 23(2), 895–920. <https://doi.org/10.5194/acp-23-895-2023>
16. Shen, J., Bigi, A., Marinoni, A., Lampilahti, J., Kontkanen, J., Ciarelli, G., Putaud, J. P., Nieminen, T., Kulmala, M., Lehtipalo, K., & Bianchi, F. (2021). Emerging Investigator Series: COVID-19 lockdown effects on aerosol particle size distributions in northern Italy. *Environ. Sci.: Atmos.*, 1(5), 214–227. <https://doi.org/10.1039/D1EA00016K>
17. Shen, J., Russell, D. M., DeVivo, J., Kunkler, F., Baalbaki, R., Mentler, B., Scholz, W., Yu, W., Caudillo-Plath, L., Sommer, E., Ahongshangbam, E., Alfaouri, D., Almeida, J., Amorim, A., Beck, L. J., Beckmann, H., Berntheusel, M., Bhattacharyya, N., Canagaratna, M. R., . . . He, X.-C. (2024). New particle formation from isoprene under upper-tropospheric conditions. *Nature*, 636(8041), 115–123. <https://doi.org/10.1038/s41586-024-08196-0>
18. Shen, J., Scholz, W., He, X.-C., Zhou, P., Marie, G., Wang, M., Marten, R., Surdu, M., Rörup, B., Baalbaki, R., Amorim, A., Ataei, F., Bell, D. M., Bertozzi, B., Brasseur, Z., Caudillo, L., Chen, D., Chu, B., Dada, L., . . . Worsnop, D. R. (2022). High Gas-Phase Methanesulfonic Acid Production in the OH-Initiated Oxidation of Dimethyl Sulfide at Low Temperatures. *Environ. Sci. Technol.*, 56(19), 13931–13944. <https://doi.org/10.1021/acs.est.2c05154>
19. Shen, J., Zheng, C., Xu, L., Zhang, Y., Zhang, Y., Liu, S., & Gao, X. (2019). Atmospheric emission inventory of SO<sub>3</sub> from coal-fired power plants in China in the period 2009–2014. *Atmospheric Environment*, 197, 14–21. <https://doi.org/10.1016/j.atmosenv.2018.10.008>
20. Simon, M., Dada, L., Heinritzi, M., Scholz, W., Stolzenburg, D., Fischer, L., Wagner, A. C., Kürten, A., Rörup, B., He, X.-C., Almeida, J., Baalbaki, R., Baccarini, A., Bauer, P. S., Beck, L., Bergen, A., Bianchi, F., Bräkling, S., Brilke, S., . . . Curtius, J. (2020). Molecular understanding of new-particle formation from  $\alpha$ -pinene between 50 and +25 °C. *Atmospheric Chemistry and Physics*, 20(15), 9183–9207. <https://doi.org/10.5194/acp-20-9183-2020>

21. Stolzenburg, D., Simon, M., Ranjithkumar, A., Kürten, A., Lehtipalo, K., Gordon, H., Ehrhart, S., Finkenzeller, H., Pichelstorfer, L., Nieminen, T., He, X.-C., Brilke, S., Xiao, M., Amorim, A., Baalbaki, R., Baccarini, A., Beck, L., Bräkling, S., Caudillo Murillo, L., . . . Winkler, P. M. (2020). Enhanced growth rate of atmospheric particles from sulfuric acid. *Atmospheric Chemistry and Physics*, 20(12), 7359–7372. <https://doi.org/10.5194/acp-20-7359-2020>
22. Surdu, M., Lamkaddam, H., Wang, D. S., Bell, D. M., Xiao, M., Lee, C. P., Li, D., Caudillo, L., Marie, G., Scholz, W., Wang, M., Lopez, B., Piedehierro, A. A., Ataei, F., Baalbaki, R., Bertozzi, B., Bogert, P., Bresseur, Z., Dada, L., . . . El Haddad, I. (2023). Molecular Understanding of the Enhancement in Organic Aerosol Mass at High Relative Humidity. *Environ. Sci. Technol.*, 57(6), 2297–2309. <https://doi.org/10.1021/acs.est.2c04587>
23. Tham, Y. J., He, X.-C., Li, Q., Cuevas, C. A., Shen, J., Kalliokoski, J., Yan, C., Iyer, S., Lehmusjärvi, T., Jang, S., Thakur, R. C., Beck, L., Kemppainen, D., Olin, M., Sarnela, N., Mikkilä, J., Hakala, J., Marbouti, M., Yao, L., . . . Sipilä, M. (2021). Direct field evidence of autocatalytic iodine release from atmospheric aerosol. *Proceedings of the National Academy of Sciences*, 118(4), e2009951118. <https://doi.org/10.1073/pnas.2009951118>
24. Wang, M., He, X.-C., Finkenzeller, H., Iyer, S., Chen, D., Shen, J., Simon, M., Hofbauer, V., Kirkby, J., Curtius, J., Maier, N., Kurtén, T., Worsnop, D. R., Kulmala, M., Rissanen, M., Volkamer, R., Tham, Y. J., Donahue, N. M., & Sipilä, M. (2021). Measurement of iodine species and sulfuric acid using bromide chemical ionization mass spectrometers. *Atmospheric Measurement Techniques*, 14(6), 4187–4202. <https://doi.org/10.5194/amt-14-4187-2021>
25. Wang, M., Kong, W., Marten, R., He, X.-C., Chen, D., Pfeifer, J., Heitto, A., Kontkanen, J., Dada, L., Kürten, A., Yli-Juuti, T., Manninen, H. E., Amanatidis, S., Amorim, A., Baalbaki, R., Baccarini, A., Bell, D. M., Bertozzi, B., Bräkling, S., . . . Donahue, N. M. (2020). Rapid growth of new atmospheric particles by nitric acid and ammonia condensation. *Nature*, 581(7807), 184–189. <https://doi.org/10.1038/s41586-020-2270-4>
26. Wang, M., Xiao, M., Bertozzi, B., Marie, G., Rörup, B., Schulze, B., Bardakov, R., He, X.-C., Shen, J., Scholz, W., Marten, R., Dada, L., Baalbaki, R., Lopez, B., Lamkaddam, H., Manninen, H. E., Amorim, A., Ataei, F., Bogert, P., . . . Donahue, N. M. (2022). Synergistic HNO<sub>3</sub>–H<sub>2</sub>SO<sub>4</sub>–NH<sub>3</sub> upper tropospheric particle formation. *Nature*, 605(7910), 483–489. <https://doi.org/10.1038/s41586-022-04605-4>
27. Yao, L., Fan, X., Yan, C., Kurtén, T., Daellenbach, K. R., Li, C., Wang, Y., Guo, Y., Dada, L., Rissanen, M. P., Cai, J., Tham, Y. J., Zha, Q., Zhang, S., Du, W., Yu, M., Zheng, F., Zhou, Y., Kontkanen, J., . . . Bianchi, F. (2020). Unprecedented Ambient Sulfur Trioxide (SO<sub>3</sub>) Detection: Possible Formation Mechanism and Atmospheric Implications. *Environ. Sci. Technol. Lett.*, 7(11), 809–818. <https://doi.org/10.1021/acs.estlett.0c00615>
28. Zhang, R., Xie, H.-B., Ma, F., Chen, J., Iyer, S., Simon, M., Heinritzi, M., Shen, J., Tham, Y. J., Kurtén, T., Worsnop, D. R., Kirkby, J., Curtius, J., Sipilä, M., Kulmala, M., & He, X.-C. (2022). Critical Role of Iodous Acid in Neutral Iodine Oxoacid Nucleation. *Environ. Sci. Technol.*, 56(19), 14166–14177. <https://doi.org/10.1021/acs.est.2c04328>
29. Zheng, C., Shao, L., Wang, Y., Zheng, H., Gao, W., Zhang, H., Wu, Z., Shen, J., & Gao, X. (2021). Investigation of the growth and removal of particles in coal-fired flue gas by temperature management. *Fuel*, 302, 121220. <https://doi.org/10.1016/j.fuel.2021.121220>
30. Zheng, C., Shen, J., Zhang, Y., Huang, W., Zhu, X., Wu, X., Chen, L., Gao, X., & Cen, K. (2017). Quantitative assessment of industrial VOC emissions in China: Historical trend, spatial distribution, uncertainties, and projection. *Atmospheric Environment*, 150, 116–125. <https://doi.org/10.1016/j.atmosenv.2016.11.023>
31. Zheng, C., Shen, J., Zhang, Y., Zhu, X., Wu, X., Chen, L., & Gao, X. (2017). Atmospheric Emission Characteristics and Control Policies of Anthropogenic VOCs from Industrial Sources in Yangtze River Delta Region, China. *Aerosol Air Qual. Res.*, 17(9), 2263–2275. <https://doi.org/10.4209/aaqr.2016.06.0234>
32. Zheng, C., Zheng, H., Shen, J., Gao, W., Yang, Z., Zhao, Z., Wang, Y., Zhang, H., & Gao, X. (2020). Evolution of Condensable Fine Particle Size Distribution in Simulated Flue Gas by External Regulation for Growth Enhancement. *Environ. Sci. Technol.*, 54(7), 3840–3848. <https://doi.org/10.1021/acs.est.9b06569>