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1 Book chapters

Olenius, T., Yli-Juuti, T., Elm, J., Kontkanen, J., and Riipinen, I.: New particle formation and growth: Creating a new atmospheric phase interface.
In: Faust, J. and House, J. (ed.): *Physical Chemistry of Gas–Liquid Interfaces*, 315-352, in *Developments in Physical & Theoretical Chemistry*, Elsevier, ISBN 9780128136416, https://doi.org/10.1016/B978-0-12-813641-6.00011-X (2018)

2 Peer-reviewed research papers in international journals

- Total 34 research papers
- 9 first-author, 8 second-author, and 1 last-author paper
- h-index 20, total >2000 citations (Google Scholar, Apr 2021)

34. **Olenius, T.**, Heitto, A., Roldin, P., Yli-Juuti, T., and Duwig, C.: Modeling of exhaust gas cleaning by acid pollutant conversion to aerosol particles.
Fuel 290, 120044, doi:10.1016/j.fuel.2020.120044 (2021)

33. Schlesinger, D., Lowe, S. J., **Olenius, T.**, Kong, X., Pettersson, J. B. C., and Riipinen, I.: Molecular perspective on water vapor accommodation into ice and its dependence on temperature.
J. Phys. Chem. A 124, 10879–10889, doi:10.1021/acs.jpca.0c09357 (2020)

32. Shcherbacheva, A., Balehowsky, T., Kubečka, J., **Olenius, T.**, Helin, T., Haario, H., Laine, M., Kurtén, T., and Vehkamäki, H.: Identification of molecular cluster evaporation rates, cluster formation enthalpies and entropies by Monte Carlo method.
Atmos. Chem. Phys. 20, 15867–15906, doi:10.5194/acp-20-15867-2020 (2020)

31. Fang, X., Hu, M., Shang, D., Tang, R., Shi, L., **Olenius, T.**, Wang, Y., Wang, H., Zhang, Z., Chen, S., Yu, X., Zhu, W., Lou, S., Ma, Y., Li, X., Zeng, L., Wu, Z., Zheng, J., and Guo, S.: Observational evidence for the involvement of dicarboxylic acids in particle nucleation.
Environ. Sci. Technol. Lett. 7, 388–394, doi:10.1021/acs.estlett.0c00270 (2020)

30. Carlsson, P. T. M., Celik, S., Becker, D., **Olenius, T.**, Elm, J., and Zeuch, T.: Neutral sulfuric acid–water clustering rates: Bridging the gap between molecular simulation and experiment.
J. Phys. Chem. Lett. 11, 4239-4244, doi:10.1021/acs.jpclett.0c01045 (2020)

29. Roldin, P., Ehn, M., Kurtén, T., **Olenius, T.**, Rissanen, M. P., Sarnela, N., Elm, J., Rantala, P., Hao, L., Hyttinen, N., Heikkinen, L., Worsnop, D. R., Pichelstorfer, L., Xavier, C., Clusius, P., Öström, E., Petäjä, T., Kulmala, M., Vehkamäki, H., Virtanen, A., Riipinen, I., and Boy, M.: The role of highly oxygenated organic molecules in the Boreal aerosol-cloud-climate system.
Nat. Commun. 10, 4370, doi:10.1038/s41467-019-12338-8 (2019)

28. Myllys, N., Kubečka, J., Besel, V., Alfaouri, D., **Olenius, T.**, Smith, J. N., and Passananti, M.: Role of base strength, cluster structure and charge in sulfuric-acid-driven particle formation.
Atmos. Chem. Phys. 19, 9753-9768, doi:10.5194/acp-2019-305 (2019)

27. Myllys, N., Chee, S., **Olenius, T.**, Lawler, M., and Smith, J. N.: Molecular-level understanding of synergistic effects in sulfuric acid—amine–ammonia mixed clusters.
J. Phys. Chem. A 123, 2420-2425, doi:10.1021/acs.jpca.9b00909 (2019)

26. Kontkanen, J., **Olenius, T.**, Kulmala, M., and Riipinen, I.: Exploring the potential of nano-Köhler theory to describe the growth of atmospheric molecular clusters by organic vapors using cluster kinetics simulations.
Atmos. Chem. Phys. 18, 13733-13754, doi:10.5194/acp-18-13733-2018 (2018)

25. **Olenius, T.**, Pichelstorfer, L., Stolzenburg, D., Winkler, P. M., Lehtinen, K. E. J., and Riipinen, I.: Robust metric for quantifying the importance of stochastic effects on nanoparticle growth.
Sci. Rep. 8, 14160, doi:10.1038/s41598-018-32610-z (2018)

24. Myllys, N., Ponkkonen, T., Passananti, M., Elm, J., Vehkamäki, H., and **Olenius, T.**: Guanidine: A highly efficient stabilizer in atmospheric new-particle formation.
J. Phys. Chem. A 122, 4717–4729, doi:10.1021/acs.jpca.8b02507 (2018)

23. Julin, J., Murphy, B. N., Patoulias, D., Fountoukis, C., **Olenius, T.**, Pandis, S. N., and Riipinen, I.: Impacts of future European emission reductions on aerosol particle number concentrations accounting for effects of ammonia, amines and organic species.
Environ. Sci. Technol. 52, 692–700, doi:10.1021/acs.est.7b05122 (2018)

22. Brus, D., Škrabalová, L., Herrmann, E., **Olenius, T.**, Trávničková, T., Makkonen, U., and Merikanto, J.: Temperature-dependent diffusion of H_2SO_4 in air at atmospherically relevant conditions: Laboratory measurements using laminar flow technique.
Atmosphere 8, 132, doi:10.3390/atmos8070132 (2017)

21. **Olenius, T.**, Halonen, R., Kurtén, T., Henschel, H., Kupiainen-Määttä, O., Ortega, I. K., Jen, C. N., Vehkamäki, H., and Riipinen, I.: New particle formation from sulfuric acid and amines: Comparison of monomethylamine, dimethylamine, and trimethylamine.
J. Geophys. Res. Atmos. 122, 7103–7118, doi:10.1002/2017JD026501 (2017)

20. Myllys, N., **Olenius, T.**, Kurtén, T., Vehkamäki, H., Riipinen, I., and Elm, J.: Effect of bisulfate, ammonia, and ammonium on the clustering of organic acids and sulfuric acid.
J. Phys. Chem. A 121, 4812–4824, doi:10.1021/acs.jpca.7b03981 (2017)

19. **Olenius, T.** and Riipinen, I.: Molecular-resolution simulations of new particle formation: Evaluation of common assumptions made in describing nucleation in aerosol dynamics models.
Aerosol Sci. Tech. 51, 397-408, doi:10.1080/02786826.2016.1262530 (2017)

18. Elm, J., Myllys, N., **Olenius, T.**, Halonen, R., Kurtén, T., and Vehkamäki, H.: Formation of atmospheric molecular clusters consisting of sulfuric acid and $C_8H_{12}O_6$ tricarboxylic acid.
Phys. Chem. Chem. Phys. 19, 4877-4886, doi:10.1039/C6CP08127D (2017)

17. Lehtipalo, K., Rondo. L., Kontkanen, J., Schobesberger, S., Jokinen, T., Sarnela, N., Kürten, A., Ehrhart, S., Franchin, A., Nieminen, T., Riccobono, F., Sipilä, M., Yli-Juuti, T., Duplissy, J., Adamov, A., Ahlm, L., Almeida, J., Amorim, A., Bianchi, F., Breitenlechner, M., Dommen, J., Downard, A. J., Dunne, E. M., Flagan, R. C., Guida, R., Hakala, J., Hansel, A., Jud, W., Kangasluoma, J., Kerminen, V.-M., Keskinen, H., Kim, J., Kirkby, J., Kupc, A., Kupiainen-Määttä, O., Laaksonen, A., Lawler, M. J., Leiminger, M., Mathot, S., **Olenius, T.**, Ortega, I. K., Onnela, A., Petäjä, T., Praplan, A., Rissanen, M. P., Ruuskanen, T., Santos, F. D., Schallhart, S., Schnitzhofer, R., Simon, M., Smith, J.

N., Tröstl, J., Tsagkogeorgas, G., Tomé, A., Vaattovaara, P., Vehkamäki, H., Vrtala, A. E., Wagner, P. E., Williamson, C., Wimmer, D., Winkler, P. M., Virtanen, A., Donahue, N. M., Carslaw, K. S., Baltensperger, U., Riipinen, I., Curtius, J., Worsnop, D. R., and Kulmala, M.: The effect of acid–base clustering and ions on the growth of atmospheric nano-particles.
Nat. Commun. 7, 11594, doi:10.1038/ncomms11594 (2016)

16. Kontkanen, J., **Olenius, T.**, Lehtipalo, K., Vehkamäki, H., Kulmala, M., and Lehtinen, K. E. J.: Growth of atmospheric clusters involving cluster–cluster collisions: Comparison of different growth rate methods.
Atmos. Chem. Phys. 16, 5545-5560, doi:10.5194/acp-16-5545-2016 (2016)

15. **Olenius, T.**, Kupiainen-Määttä, O., Lehtinen, K. E. J., and Vehkamäki, H.: Extrapolating particle concentration along the size axis in the nanometer size range requires discrete rate equations.
J. Aerosol Sci. 90, 1–13 (2015)

14. Kupiainen-Määttä, O., Henschel, H., Kurtén, T., Loukonen, V., **Olenius, T.**, Paasonen, P., and Vehkamäki, H.: Comment on 'Enhancement in the production of nucleating clusters due to dimethylamine and large uncertainties in the thermochemistry of amine-enhanced nucleation' by Nadykto et al., Chem. Phys. Lett. 609 (2014) 42-49.
Chem. Phys. Lett. 624, 107–110, doi:10.1016/j.cplett.2015.01.029 (2015)

13. Bork, N., Elm, J., **Olenius, T.**, and Vehkamäki, H.: Methane sulfonic acid-enhanced formation of molecular clusters of sulfuric acid and dimethyl amine.
Atmos. Chem. Phys. 14, 12023-12030, doi:10.5194/acp-14-12023-2014 (2014)

12. **Olenius, T.**, Riipinen, I., Lehtipalo, K., and Vehkamäki, H.: Growth rates of atmospheric molecular clusters based on appearance times and collision–evaporation fluxes: Growth by monomers.
J. Aerosol Sci. 78, 55-70 (2014)

11. Kupiainen-Määttä, O., **Olenius, T.**, Korhonen, H., Malila, J., Dal Maso, M., Lehtinen, K., and Vehkamäki, H.: Critical cluster size cannot in practice be determined by slope analysis in atmospherically relevant applications.
J. Aerosol Sci. 77, 127-144 (2014)

10. Ortega, I. K., **Olenius, T.**, Kupiainen-Määttä, O., Loukonen, V., Kurtén, T., and Vehkamäki, H.: Electrical charging changes the composition of sulfuric acid-ammonia/dimethylamine clusters.
Atmos. Chem. Phys. 14, 7995-8007, doi:10.5194/acp-14-7995-2014 (2014)

9. Henschel, H., Acosta Navarro, J. C., Yli-Juuti, T., Kupiainen-Määttä, O., **Olenius, T.**, Ortega, I. K., Clegg, S. L., Kurtén, T., Riipinen, I., and Vehkamäki, H.: Hydration of atmospherically relevant molecular clusters: Computational chemistry and classical thermodynamics.
J. Phys. Chem. A 118, 2599–2611 (2014)

8. **Olenius, T.**, Kurtén, T., Kupiainen-Määttä, O., Henschel, H., Ortega, I. K., and Vehkamäki, H.: Effect of hydration and base contaminants on sulfuric acid diffusion measurement: A computational study.
Aerosol Sci. Tech. 48, 593–603 (2014)

7. Kupiainen-Määttä, O., **Olenius, T.**, Kurtén, T., and Vehkamäki, H.: CIMS sulfuric acid detection efficiency enhanced by amines due to higher dipole moments: A computational study.
J. Phys. Chem. A 117, 14109-14119 (2013)

6. Almeida, J., Schobesberger, S., Kürten, A., Ortega, I. K., Kupiainen-Määttä, O., Praplan, A. P., Adamov, A., Amorim, A., Bianchi, F., Breitenlechner, M., David, A., Dommen, J., Donahue, N. M., Downard, A., Dunne, E., Duplissy, J., Ehrhart, S., Flagan, R. C., Franchin, A., Guida, R., Hakala,

J., Hansel, A., Heinritzi, M., Henschel, H., Jokinen, T., Junninen, H., Kajos, M., Kangasluoma, J., Keskinen, H., Kupc, A., Kurtén, T., Kvashin, A. N., Laaksonen, A., Lehtipalo, K., Leiminger, M., Leppä, J., Loukonen, V., Makhmutov, V., Mathot, S., McGrath, M. J., Nieminen, T., **Olenius, T.**, Onnela, A., Petäjä, T., Riccobono, F., Riipinen, I., Rissanen, M., Rondo, L., Ruuskanen, T., Santos, F. D., Sarnela, N., Schallhart, S., Schnitzhofer, R., Seinfeld, J. H., Simon, M., Sipilä, M., Stozhkov, Y., Stratmann, F., Tomé, A., Tröstl, J., Tsagkogeorgas, G., Vaattovaara, P., Viisanen, Y., Virtanen, A., Vrtala, A., Wagner, P. E., Weingartner, E., Wex, H., Williamson, C., Wimmer, D., Ye, P., Yli-Juuti, T., Carslaw, K. S., Kulmala, M., Curtius, J., Baltensperger, U., Worsnop, D. R., Vehkamäki, H., and Kirkby, J.: Molecular understanding of sulphuric acid–amine particle nucleation in the atmosphere.
Nature 502, 359-363, doi:10.1038/nature12663 (2013)

5. **Olenius, T.**, Kupiainen-Määttä, O., Ortega, I. K., Kurtén, T., and Vehkamäki, H.: Free energy barrier in the growth of sulfuric acid–ammonia and sulfuric acid–dimethylamine clusters.
J. Chem. Phys. 139, 084312 (2013)

4. **Olenius, T.**, Schobesberger, S., Kupiainen-Määttä, O., Franchin, A., Junninen, H., Ortega, I. K., Kurtén, T., Loukonen, V., Worsnop, D. R., Kulmala, M., and Vehkamäki, H.: Comparing simulated and experimental molecular cluster distributions.
Faraday Discuss. 165, 75-89, doi: 10.1039/C3FD00031A (2013)

3. Paasonen, P., **Olenius, T.**, Kupiainen, O., Kurtén, T., Petäjä, T., Birmili, W., Hamed, A., Hu, M., Huey, L. G., Plass-Duelmer, C., Smith, J. N., Wiedensohler, A., Loukonen, V., McGrath, M. J., Ortega, I. K., Laaksonen, A., Vehkamäki, H., Kerminen, V.-M., and Kulmala, M.: On the formation of sulphuric acid-amine clusters in varying atmospheric conditions and its influence on atmospheric new particle formation.
Atmos. Chem. Phys. 12, 9113–9133 (2012)

2. McGrath, M. J., **Olenius, T.**, Ortega, I. K., Loukonen, V., Paasonen, P., Kurtén, T., Kulmala, M., and Vehkamäki, H.: Atmospheric Cluster Dynamics Code: A flexible method for solution of the birth-death equations.
Atmos. Chem. Phys. 12, 2345-2355 (2012)

1. Ortega, I. K., Kupiainen, O., Kurtén, T., **Olenius, T.**, Wilkman, O., McGrath, M. J., Loukonen, V., and Vehkamäki, H.: From quantum chemical formation free energies to evaporation rates.
Atmos. Chem. Phys. 12, 225-235 (2012)