

## Georgios Anastasios Kelesidis

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### Education

- 2015-2019 PhD, Mechanical and Process Engineering, Particle Technology Laboratory, ETH Zürich, Switzerland.  
*Title:* Morphology and optical properties of flame-made nanoparticles,  
*Advisor:* Prof. Dr. Sotiris E. Pratsinis
- 2013-2015 MSc, Process Engineering, ETH Zürich, Zürich, Switzerland.  
*Thesis:* Soot Structure and Size Distribution by Agglomeration and Surface Growth,  
*Advisor:* Prof. Dr. Sotiris E. Pratsinis
- 2008-2013 Diploma in Chemical Engineering, University of Patras, Patras, Greece.  
*Thesis:* Viscoelastic Behavior of Blood in Small Vessels: A Numerical Investigation,  
*Advisor:* Prof. Dr. John Tsamopoulos

### Experience

- 2023-now Assistant Professor, School of Public Health, Rutgers University, USA.
- 2023-now Deputy Director, Nanoscience and Advanced Material Center, Environmental and Occupational Health Science Institute, Rutgers University, USA.
- 2021- 2022 Senior Lecturer & Research Associate (Oberassistent), ETH Zürich, Switzerland.
- 2019-2021 Lecturer & Research Associate, ETH Zürich, Switzerland.
- 2015-2019 Research & Teaching Assistant, ETH Zürich, Switzerland.
- 2011, 2014 Internship, Department of Unit Operations, Elefsis Refinery, Hellenic Petroleum S.A., Athens, Greece.

### Selected Honors & Awards

- 2022 Best 3-min presentation prize, 6<sup>th</sup> International Sooting Flame Workshop, July 22-23, Vancouver, Canada.
- 2020 Forbes 30 under 30 Europe List, Science and Healthcare, Class 2020.
- 2020 Gesellschaft für Aerosolforschung (GAeF) PhD Award, Association for Aerosol Research.
- 2020 Best Poster Award, European Aerosol Conference 2020 (Virtual), August 31 - September 4, Aachen, Germany.
- 2020 Fellow of the Global Young Scientists Summit, National Research Foundation, January 14-17, Singapore.
- 2019 ETH Medal for Outstanding Doctoral Thesis, ETH Zürich (top 8 %).
- 2019 Best Poster Award, 2019 Material Research Society (MRS) Fall Meeting, "Emerging Material Platforms and Approaches for Plasmonics, Metamaterials and Metasurfaces" Symposium, December 1-6, Boston, USA.
- 2019 First Carbon Nanomaterials Graduate Student Award, 2019 AIChE Annual Meeting, November 10-15, Orlando, USA.
- 2019 First Best Poster Award, 2019 ETH Conference on Combustion Generated Nanoparticles, June 17-20, Zürich, Switzerland.
- 2017 IBM Research Prize for MSc Thesis on Computer Modelling and Simulations in Chemistry, Biology and Material Science.
- 2016 Best Poster Award, Topic: Fundamentals, European Aerosol Conference 2016, September 4-9, Tours, France.
- 2013-2015 Particle Technology Laboratory MSc Scholarship, ETH Zürich.
- 2013 Limmat Stiftung Award of Academic Excellence, Limmat Stiftung, University of Patras (top 3 %).
- 2010 Undergraduate Student Excellence Award, University of Patras (top 3 %).

## I. Research

### A. Refereed Publications

22. Kelesidis, G.A., Crepaldi, P., Allemann, M., Duric, A. and Pratsinis, S.E., “The mobility diameter of soot determines its angular light scattering distribution”, *Combustion and Flame*, in press; doi: 10.1016/j.combustflame.2022.112476.
21. Trivanovic, U.; Martins, P.M.; Benz, S.; Kelesidis, G.A. and Pratsinis, S.E., “Dynamics of soot surface growth and agglomeration by enclosed spray combustion of jet fuel”, *Fuel* **342**, 127864 (2023).
20. Kelesidis, G.A., Rossi, N. and Pratsinis, S.E., “Porosity and crystallinity dynamics of carbon black during internal and surface oxidation”, *Carbon* **197**, 334-340 (2022).
  - [3 min talk](#) @ 6<sup>th</sup> International Sooting Flame Workshop, Vancouver, Canada (Best 3-min presentation award).
  - [12 min talk](#) @ 11<sup>th</sup> International Aerosol Conference, Athens, Greece.
19. Kelesidis, G.A., Neubauer, D., Fan, L.-S., Lohmann, U. and Pratsinis, S.E., “Enhanced direct radiative forcing by black carbon agglomerates”, *Environmental Science and Technology* **56**, 8610-8618 (2022).
  - [11 min talk](#) @ 39<sup>th</sup> Annual (Virtual) Conference of the American Association for Aerosol Research (AAAR).
18. Trivanovic, U., Kelesidis, G.A. and Pratsinis, S.E., “High-throughput generation of aircraft-like soot”, *Aerosol Science and Technology* **56**, 732-743 (2022).
17. Kelesidis, G.A., Gao, D., Starsich, F.H.L. and Pratsinis, S.E., “Light extinction by agglomerates of gold nanoparticles: A plasmon ruler for sub-10 nm interparticle distances”, *Analytical Chemistry* **94**, 5310-5316 (2022).
16. Kelesidis, G.A. and Pratsinis, S.E., “Santoro flame: the volume fraction of soot accounting for its morphology and composition”, *Combustion and Flame*, **240**, 112025-1-5 (2022).
  - [12 min talk](#) @ 39<sup>th</sup> Annual (Virtual) Conference of the American Association for Aerosol Research (AAAR).
15. Kelesidis, G.A. and Pratsinis, S.E., “A perspective on gas-phase synthesis of nanomaterials: Process design, impact and outlook”, *Chemical Engineering Journal* **421**, 129884-1-7 (2021).
14. Kelesidis, G.A. and Kholghy, M.R., “A Monodisperse Population Balance Model for Nanoparticle Agglomeration in the Transition Regime”, *Materials* **14**, 3882-1-13 (2021).
13. Kelesidis, G.A. and Pratsinis, S.E., “Determination of the volume fraction of soot accounting for its composition and morphology”, *Proc. of the Combustion Institute* **38**, 1189-1196 (2021).
  - [15 min talk](#) @ 2021 International Symposium on Combustion (Virtual), Adelaide, Australia.
12. Kelesidis, G.A. and Goudeli, E., “Self-preserving size distribution and collision frequency of flame-made nanoparticles in the transition regime”, *Proc. of the Combustion Institute* **38**, 1233-1240 (2021).
11. Kelesidis, G.A., Bruun, A. and Pratsinis, S.E., “The impact of organic carbon on soot light absorption”, *Carbon*, **172**, 742-749 (2021).
  - [3 min talk](#) @ 2020 European Aerosol Conference (Virtual), Aachen, Germany (Best Poster Award).
10. Kholghy, M.R. and Kelesidis, G.A., “Surface growth, coagulation and oxidation of soot by a monodisperse population balance model”, *Combustion and Flame*, **227**, 456-463 (2021).
9. Kelesidis, G.A., Kholghy, M.R., Zuercher, J., Robertz, J., Allemann, M., Duric, A. and Pratsinis, S.E., “Light scattering from nanoparticle agglomerates”, *Powder Technology* **365**, 52-59 (2020).
8. Kelesidis, G.A. and Pratsinis, S.E., “Soot light absorption and refractive index during agglomeration and surface growth”, *Proc. of the Combustion Institute* **37**, 1177-1184 (2019).
7. Kelesidis, G.A. and Pratsinis, S.E., “Estimating the internal and surface oxidation of soot agglomerates”, *Combustion and Flame* **209**, 493-499 (2019).
  - [3 min talk](#) @ 2020 European Aerosol Conference (Virtual), Aachen, Germany.
6. Kelesidis, G.A., Furrer, F.M., Wegner, K. and Pratsinis, S.E., “Impact of humidity on silica nanoparticle agglomerate morphology and size distribution”, *Langmuir* **34**, 8532-8541 (2018).
  - [12 min talk](#) @ 2020 European Aerosol Conference (Virtual), Aachen, Germany.
5. Kholghy, M.R., Kelesidis, G.A. and Pratsinis, S.E., “Reactive polycyclic aromatic hydrocarbon dimerization drives soot nucleation”, *Physical Chemistry Chemical Physics* **20**, 10926-10938 & Erratum, *ibid* **20**, 28941-28942 (2018).
4. Kelesidis, G.A., Goudeli, E. and Pratsinis, S.E., “Morphology and Mobility Diameter of Carbonaceous Aerosols by Agglomeration and Surface Growth”, *Carbon* **121**, 527-535 (2017).

3. Pratsinis, A., Kelesidis, G.A., Zuercher, S., Krumeich, F., Bolisetty, S., Mezzenga, R., Leroux, J.C. and Sotiriou, G.A., “Enzyme-mimetic antioxidant luminescent nanoparticles for highly sensitive hydrogen peroxide biosensing”, *ACS Nano* **11**, 12210-12218 (2017).
2. Kelesidis, G.A., Goudeli, E. and Pratsinis, S.E., “Flame synthesis of functional materials and devices: Surface growth and aggregation”, *Proc. of the Combustion Institute* **36**, 29-50 (2017).
1. Dimakopoulos, Y., Kelesidis, G.A., Tsouka, S., Georgiou, G.C. and Tsamopoulos, J., “Hemodynamics in stenotic vessels of small diameter under steady state conditions: Effect of viscoelasticity and migration of red blood cells”, *Biorheology* **52**, 183-210 (2015).

#### C. Proposals

2. “Tailor-made Carbonaceous Nanoparticles by Multiscale Combustion Design”, Swiss National Science Foundation, 1/2019- 12/2022 (48 months), 1'075'343 CHF (Principal Investigators: Prof. M.R. Kholghy, Prof. S.E. Pratsinis).
1. “Fire Detection by Light Scattering through Modeling Mature Soot Dynamics during Volatile Condensation”, Siemens AG, Building Technologies, 2/2017- 1/2018 (12 months), 89'655 CHF (Principal Investigator: Prof. S.E. Pratsinis).

#### D. Invited Talks

17. Department of Chemical and Materials Engineering, New Jersey Institute of Technology, NJ, USA (20/2/2023).
16. Centrale Supélec, University of Paris-Saclay, France, hosted by Prof. Benedetta Franzelli (8/12/2022).
15. 50<sup>th</sup> Anniversary of GAeF (German Association for Aerosols), Aachen, Germany (28/9/2022).
14. Keynote Lecture, 9<sup>th</sup> World Congress on Particle Technology, Madrid, Spain (19/9/2022).
13. 6<sup>th</sup> International Sooting Flame Workshop, Vancouver, Canada (23/7/2022).
12. Department of Chemical Engineering, University of Patras, Greece (5/7/2022).
11. SPP1980 Summer School on “Synthesis of Nanoparticles in Spray Flames”, RWTH Aachen University, Germany (18/5/2022).
10. Environmental and Occupational Health Sciences Institute, Rutgers University, NJ, USA (6/5/2022).
9. Department of Energy, Environmental & Chemical Engineering, Washington University in St. Louis, MO, USA (14/12/2021; virtual).
8. Department of Chemical Engineering & Analytical Science, University of Manchester, UK (14/6/2021; virtual).
7. Department of Engineering, King's College London, UK (28/4/2021; virtual).
6. Univ. of Cambridge CREATE Research Centre, Singapore, hosted by Prof. Markus Kraft (20/1/2020).
5. Department of Engineering, University of Cambridge, Cambridge, UK, hosted by Prof. Epaminondas Mastorakos (24/5/2019).
4. Laboratory of Air Quality & Particles Analysis, EMPA, Dübendorf, Switzerland, hosted by Prof. Jing Wang (13/5/2019).
3. IBM Research - Zürich, Rüschlikon, Switzerland, hosted by Dr. Alessandro Curioni (24/11/2017).
2. Department of Chemistry, University of Maryland, College Park, MD, USA, hosted by Prof. Michael R. Zachariah (12/9/2017).
1. Department of Chemistry & Biochemistry, University of Bielefeld, Bielefeld, Germany, hosted by Prof. Katharina Kohse-Höinghaus (26/1/2017).

#### E. Conference Oral Presentations (underlined name is presenter)

40. Kelesidis, G.A., Rossi, N. and Pratsinis, S.E., “Porosity and crystallinity dynamics of carbon black during internal and surface oxidation”, AIChE Annual Meeting 2022, Phoenix, AZ, USA (13-18/11/2022).
39. Kelesidis, G.A., Neubauer, D., Fan, L.-S., Lohmann, U. and Pratsinis, S.E., “Enhanced direct radiative forcing by black carbon agglomerates”, AIChE Annual Meeting 2022, Phoenix, AZ, USA (13-18/11/2022).
38. Kelesidis, G.A., Gao, D., Starsich, F.H.L., and Pratsinis, S.E., “Light extinction by agglomerates of gold nanoparticles: A plasmon ruler for sub-10 nm interparticle distances”, AIChE Annual Meeting 2022, Phoenix, AZ, USA (13-18/11/2022).

37. Kelesidis, G.A., Rossi, N. and Pratsinis, S.E., “Porosity and crystallinity dynamics of carbon black during internal and surface oxidation”, 5<sup>th</sup> International Symposium on Gas-phase Synthesis of Functional Nanomaterials, Duisburg, Germany (11-12/10/2022).
36. Kelesidis, G.A., Crepaldi, C., Allemann, M., Duric, A. and Pratsinis, S.E., “The mobility diameter of soot determines its angular light scattering distribution”, 40<sup>th</sup> Annual Conference of the American Association for Aerosol Research, Raleigh, NC, USA (AAAR, 3-7/10/2022).
35. Kelesidis, G.A., Trivanovic, U. and Pratsinis, S.E., “High-throughput generation of aircraft-like soot”, 40<sup>th</sup> Annual Conference of the American Association for Aerosol Research, Raleigh, NC, USA (AAAR, 3-7/10/2022).
34. Kelesidis, G.A., Neubauer, D., Fan, L.-S., Lohmann, U. and Pratsinis, S.E., “Enhanced direct radiative forcing by black carbon agglomerates”, Keynote Lecture, 9<sup>th</sup> World Congress on Particle Technology, Madrid, Spain (18-22/9/2022).
33. Kelesidis, G.A., Trivanovic, U. and Pratsinis, S.E., “High-throughput generation of aircraft-like soot”, 9<sup>th</sup> World Congress on Particle Technology, Madrid, Spain (18-22/9/2022).
32. Kelesidis, G.A., Kholghy, M.R., Robertz, J., Zuercher, J., Allemann, M., Duric, A. and Pratsinis, S.E., “Light scattering from nanoparticle agglomerates”, 9<sup>th</sup> World Congress on Particle Technology, Madrid, Spain (18-22/9/2022).
31. Kelesidis, G.A., Rossi, N. and Pratsinis, S.E., “Porosity and crystallinity dynamics of carbon black during internal and surface oxidation”, 11<sup>th</sup> International Aerosol Conference, Athens, Greece (4-9/9/2022).
30. Kelesidis, G.A., Crepaldi, C., Allemann, M., Duric, A. and Pratsinis, S.E., “The mobility diameter of soot determines its angular light scattering distribution”, Invited Talk, 6<sup>th</sup> International Sooting Flame Workshop, Vancouver, Canada (22-23/7/2022).
29. Kelesidis, G.A., Rossi, N. and Pratsinis, S.E., “Porosity and crystallinity dynamics of carbon black during internal and surface oxidation”, 2022 Cambridge Particle Meeting, Cambridge, UK (24/6/2022).
28. Kelesidis, G.A., Neubauer, D., Fan, L.-S., Lohmann, U. and Pratsinis, S.E., “Enhanced direct radiative forcing by black carbon agglomerates”, 25<sup>th</sup> ETH Conference on Combustion Generated Nanoparticles 2022, Zürich, Switzerland (21-23/6/2022).
27. Kelesidis, G.A., Neubauer, D., Fan, L.-S., Lohmann, U. and Pratsinis, S.E., “Is black carbon the 2<sup>nd</sup> largest contributor to climate change?”, 39<sup>th</sup> (Virtual) Annual Conference of the American Association for Aerosol Research (AAAR, 18-22/10/2021).
26. Kelesidis, G.A. and Pratsinis, S.E., “Santoro flame: the volume fraction of soot accounting for its morphology and composition”, 39<sup>th</sup> (Virtual) Annual Conference of the American Association for Aerosol Research (AAAR, 18-22/10/2021).
25. Kelesidis, G.A., Neubauer, D., Fan, L.-S., Lohmann, U. and Pratsinis, S.E., “Is black carbon the 2<sup>nd</sup> largest contributor to climate change?”, European Aerosol Conference 2021 (Virtual), Birmingham, UK (30/8-3/9/2021).
24. Kelesidis, G.A., Gao, D., Starsich, F.H.L. and Pratsinis, S.E., “Light extinction and heat transfer from gold nanoparticle agglomerates”, European Aerosol Conference 2021 (Virtual), Birmingham, UK (30/8-3/9/2021).
23. Kelesidis, G.A. and Pratsinis, S.E., “Santoro flame: the volume fraction of soot accounting for its morphology and composition”, European Aerosol Conference 2021 (Virtual), Birmingham, UK (30/8-3/9/2021).
22. Kelesidis, G.A. and Pratsinis, S.E., “Santoro flame: the volume fraction of soot accounting for its morphology & composition”, 2021 Cambridge Particle Meeting, Cambridge, UK (25/6/2021).
21. Kelesidis, G.A., Bruun, C.A. and Pratsinis, S.E., “Impact of organic carbon on soot light absorption”, 24<sup>th</sup> ETH Conference on Combustion Generated Nanoparticles 2021, Zürich, Switzerland (22-24/6/2021).
20. Kelesidis, G.A., Furrer, F.M., Wegner, K. and Pratsinis, S.E., “Impact of humidity on silica nanoparticle agglomerate morphology and size distribution”, European Aerosol Conference 2020 (Virtual), Aachen, Germany (31/8-4/9/2020).
19. Kelesidis, G.A. and Pratsinis, S.E., “Morphology, composition and optical properties of flame-made nanoparticles”, Wilhelm and Else Heraeus Seminar on Fuels, Processes, and Combustion Physics in the Energy Transformation, Bad Honnef, Germany (8-12/3/2020).
18. Kelesidis, G.A., Kholghy, M.R., Robertz, J., Zuercher, J., Allemann, M., Duric, A. and Pratsinis, S.E., “Fire Detection from Light Scattering”, Fall Meeting of the Material Research Society 2019, Boston, MA, USA (1-6/12/2019).
17. Kelesidis, G.A. and Pratsinis, S.E., “Internal and surface oxidation of soot agglomerates”, AIChE Annual Meeting 2019, Orlando, FL, USA (10-15/11/2019).

16. Kelesidis, G.A., Kholghy, M.R., Robertz, J., Zuercher, J., Allemann, M., Duric, A. and Pratsinis, S.E., “Light scattering from nanoparticle agglomerates”, AIChE Annual Meeting 2019, Orlando, FL, USA (10-15/11/2019).
15. Kelesidis, G.A. and Pratsinis, S.E., “The Impact of Carbonaceous Nanoparticles on Climate through Their Composition and Morphology”, AIChE Annual Meeting 2019, Orlando, FL, USA (10-15/11/2019).
14. Kelesidis, G.A. and Pratsinis, S.E., “Soot light absorption and refractive index during agglomeration and surface growth”, European Aerosol Conference 2019, Gothenburg, Sweden (25-30/8/2019).
13. Kelesidis, G.A. and Pratsinis, S.E., “Internal and surface oxidation of soot agglomerates”, European Aerosol Conference 2019, Gothenburg, Sweden (25-30/8/2019).
12. Kelesidis, G.A. and Pratsinis, S.E., “Internal and external soot oxidation”, 23<sup>rd</sup> ETH Conference on Combustion Generated Nanoparticles 2019, Zürich, Switzerland (17-20/6/2019).
11. Kelesidis, G.A. and Pratsinis, S.E., “From nascent to mature soot light absorption by agglomeration and surface growth”, AIChE Annual Meeting 2018, Pittsburgh, PA, USA (28/10-2/11/2018).
10. Kelesidis, G.A., Furrer, F.M., Wegner, K. and Pratsinis, S.E., “From nascent to mature soot light absorption by agglomeration and surface growth”, AIChE Annual Meeting 2018, Pittsburgh, PA, USA (28/10-2/11/2018).
9. Kelesidis, G.A. and Pratsinis, S.E., “Soot light absorption and refractive index during agglomeration and surface growth”, 3<sup>rd</sup> International Symposium on Gas-phase Synthesis of Functional Nanomaterials: Fundamental Understanding, Modeling and Simulation, Scale-up and Application, Duisburg, Germany (25-26/9/2018).
8. Kelesidis, G.A. and Pratsinis, S.E., “From nascent to mature soot light absorption by agglomeration and surface growth”, 37<sup>th</sup> International Symposium on Combustion, Dublin, Ireland (29/7-3/8/2018).
7. Kelesidis, G.A. and Pratsinis, S.E., “From nascent to mature soot light absorption by agglomeration and surface growth”, 22<sup>nd</sup> ETH Conference on Combustion Generated Nanoparticles 2018, Zürich, Switzerland (18-21/6/2018).
6. Kelesidis, G.A., Goudeli, E. and Pratsinis, S.E., “Mobility Size and Effective Density of Carbonaceous Aerosols”, AIChE Annual Meeting 2017, Minneapolis, MN, USA (29/10-3/11/2017).
5. Kelesidis, G.A., Pratsinis, S.E., Duric, A. and Allemann, M., “Modelling of mature soot dynamics and optical properties”, AUBE 2017, Hyattsville, MD, USA (12-14/9/2017).
4. Kelesidis, G.A., Goudeli, E. and Pratsinis, S.E., “Mobility Size and Effective Density of Soot Nanoparticles”, European Aerosol Conference 2017, Zürich, Switzerland (27/8-1/9/2017).
3. Kelesidis, G.A., Goudeli, E. and Pratsinis, S.E., “Mobility Size and Effective Density of Soot Nanoparticles”, 21<sup>th</sup> ETH Conference on Combustion Generated Nanoparticles 2017, Zürich, Switzerland (19-22/6/2017).
2. Kelesidis, G.A., Goudeli, E. and Pratsinis, S.E., “Effective Density, Mobility and Primary Particle Size during Agglomeration and Surface Growth”, Fall Meeting of the Material Research Society 2016, Boston, MA, USA (27/11-2/12/2016).
1. Kelesidis, G.A., Goudeli, E. and Pratsinis, S.E., “Nascent Soot Formation by Agglomeration and Surface Growth”, European Aerosol Conference 2016, Tours, France (4-9/9/2016).

#### *F. Conference Poster Presentations*

43. Kelesidis, G.A., Bruun, A., and Pratsinis, S.E., “Impact of organic carbon on soot light absorption”, 4<sup>th</sup> International Symposium on Gas-Phase Synthesis of Functional Nanomaterials 2020 (Virtual), Duisburg, Germany (6-9/10/2020).
42. Kelesidis, G.A., and Pratsinis, S.E., “Estimating soot volume fraction accounting for its composition and morphology”, 38<sup>th</sup> (Virtual) Annual Conference of the American Association for Aerosol Research (AAAR, 5-9/10/2020).
41. Kelesidis, G.A., Bruun, A., and Pratsinis, S.E., “Impact of organic carbon on soot light absorption”, 38<sup>th</sup> (Virtual) Annual Conference of the American Association for Aerosol Research (AAAR, 5-9/10/2020).
40. Kelesidis, G.A., Bruun, A., and Pratsinis, S.E., “Impact of organic carbon on soot light absorption”, European Aerosol Conference 2020 (Virtual), Aachen, Germany (31/8-4/9/2020).
39. Kelesidis, G.A., and Pratsinis, S.E., “Oxidation dynamics of carbonaceous nanoparticles”, European Aerosol Conference 2020 (Virtual), Aachen, Germany (31/8-4/9/2020).

38. Kelesidis, G.A., and Pratsinis, S.E., “Estimating soot volume fraction accounting for its composition and morphology”, European Aerosol Conference 2020 (Virtual), Aachen, Germany (31/8-4/9/2020).
37. Kelesidis, G.A. and Pratsinis, S.E., “Light Absorption and Refractive Index During Agglomeration and Surface Growth of Carbonaceous Nanoparticles”, Fall Meeting of the Material Research Society 2019, Boston, MA, USA (1-6/12/2019).
36. Gao, D., Kelesidis, G.A. and Pratsinis, S.E., “Light Absorption from Gold Nanoparticle Agglomerates”, Fall Meeting of the Material Research Society 2019, Boston, MA, USA (1-6/12/2019).
35. Kelesidis, G.A., Gao, D. and Pratsinis, S.E., “Light Absorption from Gold Nanoparticle Agglomerates”, AIChE Annual Meeting 2019, Orlando, FL, USA (10-15/11/2019).
34. Kelesidis, G.A. and Pratsinis, S.E., “Oxidation of Carbon Black Agglomerates”, AIChE Annual Meeting 2019, Orlando, FL, USA (10-15/11/2019).
33. Kelesidis, G.A. “Dynamics of Carbonaceous Nanoparticles: Climate Impact & Fire Detection”, AIChE Annual Meeting 2019, Orlando, FL, USA (10-15/11/2019).
32. Kelesidis, G.A., Kholghy, M.R., Robertz, J., Zuercher, J., Allemann, M., Duric, A. and Pratsinis, S.E., “Light scattering from nanoparticle agglomerates”, European Aerosol Conference 2019, Gothenburg, Sweden (25-30/8/2019).
31. Kelesidis, G.A., Smatsi, N., Furrer, F.M., Wegner, K., and Pratsinis, S.E., “Impact of humidity on silica nanoparticle agglomerate morphology and size distribution”, European Aerosol Conference 2019, Gothenburg, Sweden (25-30/8/2019).
30. Kelesidis, G.A., Bruun, A., Kholghy, M.R., Fan, L.-S., and Pratsinis, S.E., “The impact of composition and morphology on soot optical properties”, 23<sup>rd</sup> ETH Conference on Combustion Generated Nanoparticles 2019, Zürich, Switzerland (17-20/6/2019).
29. Kelesidis, G.A., Furrer, F.M., Wegner, K., and Pratsinis, S.E., “Impact of humidity on silica nanoparticle agglomerate morphology and size distribution”, 23<sup>rd</sup> ETH Conference on Combustion Generated Nanoparticles 2019, Zürich, Switzerland (17-20/6/2019).
28. Kelesidis, G.A., “Flame-Made Nanoparticles: Morphology, Optical Properties and Climate Impact”, AIChE Annual Meeting 2018, Pittsburgh, PA, USA (28/10-2/11/2018).
27. Kelesidis, G.A. and Goudeli, E., “Agglomerate Formation with Polydisperse Primary Particles in the Transition Regime”, AIChE Annual Meeting 2018, Pittsburgh, PA, USA (28/10-2/11/2018).
26. Kelesidis, G.A., Kholghy, M.R., Robertz, J., Zuercher, J., Allemann, M., Duric, A. and Pratsinis, S.E., “Carbon Black Morphology, Light Scattering and Direct Radiative Forcing”, AIChE Annual Meeting 2018, Pittsburgh, PA, USA (28/10-2/11/2018).
25. Kelesidis, G.A. and Pratsinis, S.E., “Oxidation of fractal-like soot agglomerates”, AIChE Annual Meeting 2018, Pittsburgh, PA, USA (28/10-2/11/2018).
24. Kelesidis, G.A., Furrer, F.M., Wegner, K., and Pratsinis, S.E., “Impact of humidity on silica nanoparticle agglomerate morphology and size distribution”, 3<sup>rd</sup> International Symposium on Gas-phase Synthesis of Functional Nanomaterials: Fundamental Understanding, Modeling and Simulation, Scale-up and Application, Duisburg, Germany (25-26/9/2018).
23. Kelesidis, G.A., Kholghy, M.R., Zuercher, J., Robertz, J., Allemann, M., Duric, A., and Pratsinis, S.E., “Soot morphology and light scattering”, 3<sup>rd</sup> International Symposium on Gas-phase Synthesis of Functional Nanomaterials: Fundamental Understanding, Modeling and Simulation, Scale-up and Application, Duisburg, Germany (25-26/9/2018).
22. Kelesidis, G.A., and Pratsinis, S.E., “Oxidation of fractal-like soot agglomerates”, 37<sup>th</sup> International Symposium on Combustion, Dublin, Ireland (29/7-3/8/2018).
21. Kelesidis, G.A., Furrer, F.M., Smatsi, N., Wegner, K., and Pratsinis, S.E., “Impact of humidity on silica nanoparticle agglomerate morphology and size distribution”, 37<sup>th</sup> International Symposium on Combustion, Dublin, Ireland (29/7-3/8/2018).
20. Kelesidis, G.A., Kholghy, M.R., Robertz, J., Zuercher, J., Allemann, M., Duric, A., and Pratsinis, S.E., “Soot morphology, light scattering and direct radiative forcing”, 37<sup>th</sup> International Symposium on Combustion, Dublin, Ireland (29/7-3/8/2018).
19. Kelesidis, G.A., Kholghy, M.R., Zuercher, J., Robertz, J., Allemann, M., Duric, A., and Pratsinis, S.E., “Soot morphology, light scattering and direct radiative forcing”, 22<sup>nd</sup> ETH Conference on Combustion Generated Nanoparticles 2018, Zürich, Switzerland (18-21/6/2018).
18. Kelesidis, G.A., Furrer, F.M., Goudeli, E., Eggersdorfer, M.L., Wegner, K. and Pratsinis, S.E., “Control of Particle Structure and Size Distribution by Relative Humidity”, AIChE Annual Meeting 2017, Minneapolis, MN, USA (29/10-3/11/2017).

17. Kelesidis, G.A., Goudeli, E., and Pratsinis, S.E., “Nascent Soot Formation by Agglomeration and Surface Growth”, AIChE Annual Meeting 2017, Minneapolis, MN, USA (29/10-3/11/2017).
16. Kelesidis, G.A., Furrer, F.M., Goudeli, E., Eggersdorfer, M.L., Wegner, K. and Pratsinis, S.E., “Control of Particle Structure and Size Distribution by Relative Humidity”, European Aerosol Conference 2017, Zürich, Switzerland (27/8-1/9/2017).
15. Kelesidis, G.A., and Pratsinis, S.E., “Morphology and Optical Properties of Nascent and Mature Soot”, European Aerosol Conference 2017, Zürich, Switzerland (27/8-1/9/2017).
14. Kelesidis, G.A., Furrer, F.M., Goudeli, E., Eggersdorfer, M.L., Wegner, K. and Pratsinis, S.E., “Control of Particle Structure and Size Distribution by Relative Humidity”, Clusters & Nanostructures; Gordon Research Conference, South Hadley, MA, USA (9-14/7/2017).
13. Kelesidis, G.A., Goudeli, E., and Pratsinis, S.E., “Soot Mobility Size and Effective Density”, Clusters & Nanostructures; Gordon Research Seminar, South Hadley, MA, USA (8-9/7/2017).
12. Kelesidis, G.A., Goudeli, E., and Pratsinis, S.E., “Soot Mobility Size and Effective Density”, International Bunsen Discussion Meeting on Chemistry and Diagnostics for Clean Combustion, Bielefeld, Germany (21-23/6/2017).
11. Kelesidis, G.A., Zürcher, J., and Pratsinis, S.E., “Optical Properties of Nascent and Mature Soot Aggregates Growing by Agglomeration & Surface Growth”, 21th ETH Conference on Combustion Generated Nanoparticles 2017, Zürich, Switzerland (19-22/6/2017).
10. Kelesidis, G.A., Goudeli, E., and Pratsinis, S.E., “Agglomerate Structure and Size Distribution in the Transition Regime: The Effect of Primary Particle Polydispersity”, 21th ETH Conference on Combustion Generated Nanoparticles 2017, Zürich, Switzerland (19-22/6/2017).
9. Kelesidis, G.A., Goudeli, E. and Pratsinis, S.E., “Nascent Soot Formation by Agglomeration & Surface Growth”, Swiss Association of Computational Chemistry: Spring Meeting, Zürich, Switzerland (9/2/2017).
8. Kelesidis, G.A., Furrer, F.M., Goudeli, E., Eggersdorfer, M.L., Wegner, K. and Pratsinis, S.E., “Control of Particle Structure and Size Distribution by Relative Humidity”, Fall Meeting of the Material Research Society 2016, Boston, MA, USA (27/11-2/12/2016).
7. Kelesidis, G.A., Goudeli, E. and Pratsinis, S.E., “Nascent Soot Formation by Agglomeration & Surface Growth”, Fall Meeting of the Material Research Society 2016, Boston, MA, USA (27/11-2/12/2016).
6. Kelesidis, G.A., Goudeli, E. and Pratsinis, S.E., “Soot Primary Particle Size and Effective Density by Agglomeration and Surface Growth”, European Aerosol Conference 2016, Tours, France (4-9/9/2016).
5. Kelesidis, G.A., Goudeli, E. and Pratsinis, S.E., “Soot Primary Particle Size and Effective Density by Agglomeration and Surface Growth”, 36<sup>th</sup> International Symposium on Combustion, Seoul, Republic of Korea (1/7-5/8/2016).
4. Kelesidis, G.A., Goudeli, E. and Pratsinis, S.E., “Nascent Soot Formation by Agglomeration & Surface Growth”, 20<sup>th</sup> ETH Conference on Combustion Generated Nanoparticles 2016, Zürich, Switzerland (13-16/6/2016).
3. Kelesidis, G.A., Furrer, F.M., Goudeli, E., Eggersdorfer, M.L., Wegner, K. and Pratsinis, S.E., “Control of Particle Structure and Size Distribution by Relative Humidity”, 20<sup>th</sup> ETH Conference on Combustion Generated Nanoparticles 2016, Zürich, Switzerland (13-16/6/2016).
2. Kelesidis, G.A., Goudeli, E. and Pratsinis, S.E., “Nascent Soot Formation by Agglomeration & Surface Growth”, PARTEC 2016, the International Congress of Particle Technology, Nuremberg, Germany (19-21/4/2016).
1. Kelesidis, G.A., Goudeli, E. and Pratsinis, S.E., “Agglomerate structure and size distribution by coagulation and surface growth”, European Aerosol Conference, Milan, Italy (6/9-11/9/2015).

## II. Teaching

### *A. Lecturer & Teaching Assistant*

4. Introduction to Nanoscale Engineering (BSc-level): Fall 2018
3. Micro- and Nanoparticle Technology (MSc-level): Spring 2017, 2019, 2020 (Lecturer), Fall 2020 (Lecturer), 2021 (Lecturer), 2022 (Lecturer)
2. Mass Transfer (BSc-level): Fall 2015, 2016, 2019, 2021, 2022
1. Laboratory Practicum in Process Engineering (MSc-level): Spring 2016, 2020

### *B. Supervision of Students & Postdoctoral fellows*

25. Denisa Lizonova, Postdoctoral fellow, Rutgers University, since Spring 2023.
24. Una Trivanovic, PhD student, ETH Zürich, since Spring 2020.
23. Patrizia Crepaldi, “The dynamics of carbonaceous nanoparticle porosity during oxidation”, MSc Thesis, ETH Zürich, Spring 2022.
22. Amogh Nagarkar, “Solar steam generation using carbonaceous nanomaterials”, MSc Thesis, ETH Zürich, Spring 2022.
21. Giuseppe Pier Rivano, “Steam Generation by Plasmonic & Organic Nanoparticles”, student project in the class Micro- and Nanoparticle Technology, ETH Zürich, Fall 2021.
20. Simon Benz, “Carbon black morphology and size distribution by discrete element modelling”, MSc Thesis, ETH Zürich, Fall 2021.
19. Patrizia Crepaldi, “Light scattering from compact and ramified agglomerates of carbonaceous nanoparticles”, MSc project, ETH Zürich, Spring 2021.
18. Amogh Nagarkar, “The impact of humidity on soot morphology and optical properties”, MSc project, ETH Zürich, Spring 2021.
17. Dimitri Saad, “Soot dynamics in rich premixed flames by interfacing a monodisperse population balance model with chemical kinetic simulations”, MSc project, ETH Zürich, Spring 2021.
16. Patrizia Crepaldi, “The impact of soot maturity on inter-particle light scattering”, student project in the class Micro- and Nanoparticle Technology, ETH Zürich, Fall 2020.
15. Amogh Nagarkar, “The impact of oxidant composition on activated carbon morphology”, student project in the class Micro- and Nanoparticle Technology, ETH Zürich, Fall 2020.
14. Nicola Rossi, “Dynamics of carbon black morphology and crystallinity during oxidation”, BSc thesis, ETH Zürich, Fall 2020.
13. Luca Illien, “Plasmonic nanoparticle agglomerates for pollutant detection”, MSc project, ETH Zürich, Spring 2020.
12. Simon Benz (co-advised with Dr. Emmanouil Symianakis & Prof. Vlasis Mavrantzas), “Impact of soot molecular composition on its optical properties: A Density Functional Theory Study”, MSc project, ETH Zürich, Spring 2020.
11. Nicola Rossi, “Internal and surface oxidation of carbon black agglomerates”, student project in the class Introduction to Nanoscale Engineering, ETH Zürich, Fall 2019.
10. Alp Yucesan, “Image analysis of fractal-like agglomerate morphology”, student project in the class Introduction to Nanoscale Engineering, ETH Zürich, Fall 2019.
9. Pavel Malach, “The impact of organic carbon on multiple light scattering and absorption by soot agglomerates”, student project in the class Micro- and Nanoparticle Technology, ETH Zürich, Spring 2019.
8. Daniel Gao, “Evolution of gold light absorption during nanoparticle agglomeration”, BSc thesis, ETH Zürich, Spring 2019.
7. Christian Alexander Bruun, “Impact of organic carbon on soot optical properties”, BSc thesis, ETH Zürich, Spring 2019.
6. Natalia Smatsi, “Characterization of nanoparticle agglomerate morphology by visual recognition using machine learning”, MSc project, ETH Zürich, Spring 2019.
5. Daniel Gao, “Design of plasmonic nanoparticle morphology for photothermal cancer treatment”, student project in the class Introduction to Nanoscale Engineering, ETH Zürich, Fall 2018.
4. Joel Zürcher, “Modeling of Nascent and Mature Soot Optical Properties”, BSc thesis, ETH Zürich, Spring 2017.
3. Gian Heinrich, “The effect of inception on nascent soot size and morphology”, student project in the class Introduction to Nanoscale Engineering, ETH Zürich, Fall 2016.
2. Joel Zürcher, “Fire detection by soot aggregate light scattering”, student project in the class Introduction to Nanoscale Engineering, ETH Zürich, Fall 2016.
1. Florian M. Furrer, “Control of Particle Structure and Size Distribution by Humidity”, BSc thesis, ETH Zürich, Spring 2016.



### III. Professional Service

#### A. Reviewer (in parenthesis # of articles):

Proceedings of the Combustion Institute (9),  
Carbon (8),  
Combustion and Flame (8),  
Powder Technology (6),  
Journal of Aerosol Science (6),  
Langmuir (2),  
Journal of Nanoparticle Research (2),  
ACS Nano (1),  
Aerosol Science & Technology (1),  
Proceedings of the National Academy of  
Sciences of the USA (1),  
Chemical Engineering Journal (1),  
Fuel (1),  
Frontiers in Energy Research (1),

ChemPhysChem (1),  
Journal of Physical Chemistry B (1),  
Journal of Computational Physics (1),  
Applied Mathematical Modelling (1),  
Journal of Quantitative Spectroscopy and  
Radiative Transfer (1),  
Chemical Engineering Science (1),  
Chemical Physics Letters (1),  
Flow, Turbulence and Combustion (1),  
Environmental Science and Pollution  
Research (1),  
MRS Advances (1),  
Frontiers in Physics (1).

#### B. Session Chair:

Member of the leadership team on Laminar Flames and Chemistry and Particle Formation,  
International Sooting Flame Workshop (8/7/2022-now).  
40<sup>th</sup> Annual Conference of the American Association for Aerosol Research, Raleigh, NC, USA  
(AAAR, 3-7/10/2022).  
Session 8CO: "Combustion I"  
11<sup>th</sup> International Aerosol Conference, Athens, Greece (4-9/9/2022).  
Session BAP: "Physical Properties of Aerosols"  
9<sup>th</sup> World Congress on Particle Technology, Madrid, Spain (18-22/9/2022).  
Session T7: "Aerosol Technology"  
39<sup>th</sup> (Virtual) Annual Conference of the American Association for Aerosol Research (AAAR,  
18-22/10/2021).  
Session 6NM: "Nanomaterials & Synthesis I"  
European Aerosol Conference 2021 (Virtual), Birmingham, UK (30/8-3/9/2021).  
Session AT 2: "Structuring and applications of functional nanoparticles"  
38<sup>th</sup> (Virtual) Annual Conference of the American Association for Aerosol Research (AAAR,  
5-9/10/2020).  
Session 6AP: "Aerosol physics: Optical properties of carbonaceous nanoparticles"  
European Aerosol Conference 2020 (Virtual), Aachen, Germany (31/8-4/9/2020).  
Session BAP 1: "Aerosol nucleation, growth, evaporation, agglomeration,  
fragmentation, filtration and interactions with surfaces"  
European Aerosol Conference 2019, Gothenburg, Sweden (25-30/8/2019).  
Session O2\_F3\_T: "Fundamental processes in combustion and transport related aerosol",  
Session O3\_A7\_B: "Aerosol filtration and optical properties"  
Material Research Society, Fall Meeting 2016, Boston, MA, USA (27/11-2/12/2016).  
Symposium NM6: "Nanoscale Materials and Devices by High-Temperature Gas-Phase  
Processes", Sessions: Modeling; Processing and Scaling-Up