

Stanford



Adam Boies

Associate Professor of Mechanical Engineering

 Curriculum Vitae available Online

Bio

BIO

Adam Boies is head of the Aerosol and Nanotechnology for Energy and the Environment (ANEE) laboratory, which focuses on developing energy and environmental technologies through aerosol and nano-scale approaches that can either synthesize or measure aerosols, nanoparticles, or pollution.

He was previously Professor of Nanomaterials and Aerosol Engineering and Head of the Energy Faculty at the Cambridge University Engineering Department. He served as director of the Advanced Carbon Application and Manufacturing network and was co-creator and Partnership Director of the Aerosol Science CDT.

See www.ANEEStanford.com

ACADEMIC APPOINTMENTS

- Associate Professor, Mechanical Engineering

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

The Boies group focuses on characterizing the evolution, dynamics and impacts of two-phase reacting flows with an emphasis on aerosol technology applied to energy materials, nanomaterial morphology and particle sensing. His group has developed methods to synthesize and characterize carbon nanotube materials that self-assemble into aerogels which are post processed as advanced fibres or mats. Complimentary work in nanomaterial sensing has enabled new techniques to measure nanomaterial morphology such as fractal structures with application in pollution, fire detection, non-exhaust particles and aircraft emissions and contrails. Applications of our core technologies include nanomanufacturing processing technologies, electrochemistry applied to lithium-ion electrode materials, filtering and catalysis of pollutants.

Adam Boies is a Fellow of Trinity College and has over 100 publications and 15 patents. He has been granted >\$40m total project funding from EPSRC, IUK, EU Horizon2020 and NERC. Technology from his group launched five spin-outs, where he serves as Research Director for Catalytic Instruments (emissions sensing); co-founder of Echion Technologies (lithium ion electrode materials), CamVolt Ltd. (battery cycling measurement) and AetoSense (pollution detection); and has licenced technology to Atmos Ltd (air quality monitoring). He serves as a board member of the UK Aerosol Society and is Chief Scientific Advisor to Q-Flo Technologies.

Teaching

COURSES

2024-25

- Convective Heat Transfer: ME 352C (Spr)

- Heat Transfer: ME 131 (Win)
- Thermofluids, Energy, and Propulsion Research Seminar: ME 390A (Spr)

STANFORD ADVISEES

Doctoral (Program)

Elizabeth Fletes, José Hasbani

Publications

PUBLICATIONS

- **Vehicle emission models alone are not sufficient to understand full impact of change in traffic signal timings** *ATMOSPHERIC ENVIRONMENT-X*
Schroeder, A. K., Woodward, H., Le Cornec, C. A., Proust, T., Benie, P. J., Fan, S., Aristodemou, E., Jones, R. L., Linden, P. F., de Nazelle, A., Boies, A. M., Stettler, M. J.
2024; 24
- **Airborne Tire Wear Particles: A Critical Reanalysis of the Literature Reveals Emission Factors Lower than Expected** *ENVIRONMENTAL SCIENCE & TECHNOLOGY LETTERS*
Saladin, S., Boies, A., Giorio, C.
2024
- **Gas-Phase Dynamics of Bundle Formation from High-Aspect-Ratio Carbon Nanotubes.** *Langmuir : the ACS journal of surfaces and colloids*
Qiao, R., Qiu, X., Boies, A.
2024
- **Method development and analysis of nanoparticle size fractions from tire-wear emissions** *ENVIRONMENTAL SCIENCE-ATMOSPHERES*
Haugen, M., Buehler, P., Schlaefle, S., O'Loughlin, D., Saladin, S., Giorio, C., Boies, A.
2024; 4 (9): 1079-1090
- **Charge-Based Separation of Microparticles Using AC Insulator-Based Dielectrophoresis** *ANALYTICAL CHEMISTRY*
Tabarhoseini, S., Kale, A., Koniers, P., Boone, A., Bentor, J., Boies, A., Zhao, H., Xuan, X.
2024; 96 (33): 13672-13678
- **Synthesis Pathway of Layered-Oxide Cathode Materials for Lithium-Ion Batteries by Spray Pyrolysis** *ACS APPLIED MATERIALS & INTERFACES*
Almazrouei, M., Park, S., Houck, M., De Volder, M., Hochgreb, S., Boies, A.
2024; 16 (26): 33633-33646
- **Exploring the bounds of methane catalysis in the context of atmospheric methane removal** *ENVIRONMENTAL RESEARCH LETTERS*
Tsopelakou, A., Stallard, J., Archibald, A. T., Fitzgerald, S., Boies, A. M.
2024; 19 (5)
- **Flexible Bifunctional Electrode for Alkaline Water Splitting with Long-Term Stability** *ACS APPLIED MATERIALS & INTERFACES*
Ganguly, A., McGlynn, R. J., Boies, A., Maguire, P., Mariotti, D., Chakrabarti, S.
2024; 16 (10): 12339-12352
- **Continuous gas-phase synthesis of iron nanoparticles at ambient conditions with controllable size and polydispersity** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*
Qiao, R., Boies, A.
2024; 658: 986-996
- **Dynamics of unipolar charged particles flowing through a cylindrical tube at high number concentrations** *JOURNAL OF AEROSOL SCIENCE*
Kale, A., Woo, M., Swanson, J. J., Lim, D., Boies, A. M.
2024; 176
- **Enhanced composite thermal conductivity by percolated networks of *in-situ* confined-grown carbon nanotubes** *NANO RESEARCH*
Zhang, X., Tan, W., Carey, T., Wen, B., He, D., Arbab, A., Groombridge, A., Smail, F., de La Verpilliere, J., Yao, C., Wang, Y., Wei, X., Liu, et al
2023

- **Enhanced Visible Light-Driven Photocatalytic Water-Splitting Reaction of Titanate Nanotubes Sensitised with Ru(II) Bipyridyl Complex** *NANOMATERIALS*
Malizia, M., Scott, S. A., Torrente-Murciano, L., Boies, A. M., Aljohani, T. A., Baldovi, H. G.
2023; 13 (22)
- **Condensation particle counters: Exploring the limits of miniaturisation** *JOURNAL OF AEROSOL SCIENCE*
Balendra, S., Kale, A., Pongetti, J., Kazemimanesh, M., Haugen, M., Weller, L., Boies, A.
2024; 175
- **Boosting total oxidation of methane over NiO nanocrystalline decorated ZnO-CoNi solid solution via photothermal synergism** *APPLIED CATALYSIS B-ENVIRONMENTAL*
Sun, C., Zhao, K., Boies, A., Xiao, S., Yi, Z.
2023; 339
- **Overview of methods to characterize the mass, size, and morphology of soot** *JOURNAL OF AEROSOL SCIENCE*
Sipkens, T. A., Boies, A., Corbin, J. C., Chakrabarty, R. K., Olfert, J., Rogak, S. N.
2023; 173
- **Multi-element analysis of tyre rubber for metal tracers** *ENVIRONMENT INTERNATIONAL*
O'Loughlin, D. P., Haugen, M. J., Day, J., Brown, A. S., Braysher, E. C., Molden, N., Willis, A. E., MacFarlane, M., Boies, A. M.
2023; 178: 108047
- **Parameterization and modeling protocols for ultra-fast charging Wadsley-Roth lithium-ion batteries from coin to pouch cells** *CELL REPORTS PHYSICAL SCIENCE*
Houck, M. E., Groombridge, A. S., De Volder, M. L., Boies, A. M.
2023; 4 (5)
- **Compact aerosol aggregate model (CA²M): A fast tool to estimate the aerosol properties of fractal-like aggregates** *AEROSOL SCIENCE AND TECHNOLOGY*
Jourdain, C., Symonds, J. R., Boies, A. M.
2023; 57 (8): 797-809
- **Analysis of Differences in Electrochemical Performance Between Coin and Pouch Cells for Lithium-Ion Battery Applications** *ENERGY & ENVIRONMENTAL MATERIALS*
Son, Y., Cha, H., Lee, T., Kim, Y., Boies, A., Cho, J., De Volder, M.
2024; 7 (3)
- **Direct-spun CNT textiles for high-performance electromagnetic interference shielding in an ultra-wide bandwidth** *CARBON*
Issman, L., Alper, M., Howard, S., Karch, C., Yeshurun, S., Pick, M., Boies, A.
2023; 206: 166-180
- **Simultaneously enhanced tenacity, rupture work, and thermal conductivity of carbon nanotube fibers by raising effective tube portion** *SCIENCE ADVANCES*
Zhang, X., De Volder, M., Zhou, W., Issman, L., Wei, X., Kaniyoor, A., Portas, J., Smail, F., Wang, Z., Wang, Y., Liu, H., Zhou, W., Elliott, et al
2022; 8 (50): eabq3515
- **Measuring the Air Quality Using Low-Cost Air Sensors in a Parking Garage at University of Minnesota, USA** *INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH*
Gonzalez, A., Boies, A., Swanson, J., Kittelson, D.
2022; 19 (22)
- **Forecasting carbon nanotube diameter in floating catalyst chemical vapor deposition** *CARBON*
Bulmer, J. S., Sloan, A. N., Glerum, M., Carpena-Nunez, J., Waelder, R., Humes, J., Boies, A. M., Pasquali, M., Rao, R., Maruyama, B.
2023; 201: 719-733
- **Measurements and modelling of the three-dimensional near-field dispersion of particulate matter emitted from passenger ships in a port environment** *ATMOSPHERIC ENVIRONMENT*
Haugen, M. J., Gkantonas, S., El Helou, I., Pathania, R., Mastorakos, E., Boies, A. M.
2022; 290
- **Towards Portable MEMS Oscillators for Sensing Nanoparticles** *SENSORS*

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- Chellasivalingam, M., Zielinski, A. T., Whitney, T. S., Boies, A. M., Seshia, A. A.
2022; 22 (15)
- **High degree of N-functionalization in macroscopically assembled carbon nanotubes** *JOURNAL OF MATERIALS SCIENCE*
McGlynn, R. J., Brunet, P., Chakrabarti, S., Boies, A., Maguire, P., Mariotti, D.
2022; 57 (28): 13314-13325
 - **A study on the performance of low-cost sensors for source apportionment at an urban background site** *ATMOSPHERIC MEASUREMENT TECHNIQUES*
Bousiotis, D., Beddows, D. S., Singh, A., Haugen, M., Diez, S., Edwards, P. M., Boies, A., Harrison, R. M., Pope, F. D.
2022; 15 (13): 4047-4061
 - **Highly Oriented Direct-Spun Carbon Nanotube Textiles Aligned by In Situ Radio-Frequency Fields** *ACS NANO*
Issman, L., Kloza, P. A., Portas, J., Collins, B., Pendashteh, A., Pick, M., Vilatela, J. J., Elliott, J. A., Boies, A.
2022; 16 (6): 9583-9597
 - **Open-source modelling of aerosol dynamics and computational fluid dynamics: Bipolar and unipolar diffusion charging and photoelectric charging** *COMPUTER PHYSICS COMMUNICATIONS*
Woo, M., Schriefl, M. A., Knoll, M., Boies, A. M., Stettler, M. J., Hochgreb, S., Nishida, R. T.
2022; 278
 - **Source terms for benchmarking models of SARS-CoV-2 transmission via aerosols and droplets** *ROYAL SOCIETY OPEN SCIENCE*
Stettler, M. J., Nishida, R. T., de Oliveira, P. M., Mesquita, L. C., Johnson, T. J., Galea, E. R., Grandison, A., Ewer, J., Carruthers, D., Sykes, D., Kumar, P., Avital, E., Obeysekara, et al
2022; 9 (5): 212022
 - **Differentiating Semi-Volatile and Solid Particle Events Using Low-Cost Lung-Deposited Surface Area and Black Carbon Sensors** *ATMOSPHERE*
Haugen, M. J., Singh, A., Bousiotis, D., Pope, F. D., Boies, A. M.
2022; 13 (5)
 - **Measuring the effect of fireworks on air quality in Minneapolis, Minnesota** *SN APPLIED SCIENCES*
Gonzalez, A., Boies, A., Swanson, J., Kittelson, D.
2022; 4 (5)
 - **Electrification versus hydrogen for UK road freight: Conclusions from a systems analysis of transport energy transitions** *ENERGY FOR SUSTAINABLE DEVELOPMENT*
Haugen, M. J., Flynn, D., Greening, P., Tichler, J., Blythe, P., Boies, A. M.
2022; 68
 - **A comparative study on effective density, shape factor, and volatile mixing of non-spherical particles using tandem aerodynamic diameter, mobility diameter, and mass measurements** *JOURNAL OF AEROSOL SCIENCE*
Kazemimanesh, M., Rahman, M., Duca, D., Johnson, T. J., Addad, A., Giannopoulos, G., Focsa, C., Boies, A. M.
2022; 161
 - **Utah Wintertime Measurements of Heavy-Duty Vehicle Nitrogen Oxide Emission Factors** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Bishop, G. A., Haugen, M. J., McDonald, B. C., Boies, A. M.
2022; 56 (3): 1885-1893
 - **Reliable protocols for calculating the specific energy and energy density of Li-Ion batteries** *MATERIALS TODAY ENERGY*
Son, Y., Cha, H., Jo, C., Groombridge, A. S., Lee, T., Boies, A., Cho, J., De Volder, M.
2021; 21
 - **Filtration of viral aerosols via a hybrid carbon nanotube active filter** *CARBON*
Issman, L., Graves, B., Terrones, J., Hosmillo, M., Qiao, R., Glerum, M., Yeshurun, S., Pick, M., Goodfellow, I., Elliott, J., Boies, A.
2021; 183: 232-242
 - **Assessing the sources of particles at an urban background site using both regulatory instruments and low-cost sensors - a comparative study** *ATMOSPHERIC MEASUREMENT TECHNIQUES*
Bousiotis, D., Singh, A., Haugen, M., Beddows, D. S., Diez, S., Murphy, K. L., Edwards, P. M., Boies, A., Harrison, R. M., Pope, F. D.
2021; 14 (6): 4139-4155
 - **Multiscale numerical modeling of solid particle penetration and hydrocarbons removal in a catalytic stripper** *AEROSOL SCIENCE AND TECHNOLOGY*
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- Woo, M., Giannopoulos, G., Rahman, M., Swanson, J., Stettler, M. J., Boies, A. M.
2021; 55 (9): 987-1000
- **Chemical characterization of size-selected nanoparticles emitted by a gasoline direct injection engine: Impact of a catalytic stripper** *FUEL*
Duca, D., Rahman, M., Carpentier, Y., Pirim, C., Boies, A., Focsa, C.
2021; 294
 - **Vanadium Dioxide Cathodes for High-Rate Photo-Rechargeable Zinc-Ion Batteries** *ADVANCED ENERGY MATERIALS*
Deka Boruah, B., Mathieson, A., Park, S., Zhang, X., Wen, B., Tan, L., Boies, A., De Volder, M.
2021; 11 (13)
 - **Generating an aerosol of homogeneous, non-spherical particles and measuring their bipolar charge distribution** *JOURNAL OF AEROSOL SCIENCE*
Johnson, T. J., Nishida, R. T., Zhang, X., Symonds, J. R., Olfert, J. S., Boies, A. M.
2021; 153
 - **Surfactant-free synthesis of copper nanoparticles and gas phase integration in CNT-composite materials** *NANOSCALE ADVANCES*
Brunet, P., McGlynn, R. J., Alessi, B., Smail, F., Boies, A., Maguire, P., Mariotti, D.
2021; 3 (3): 781-788
 - **A fork in the road: Which energy pathway offers the greatest energy efficiency and CO₂ reduction potential for low-carbon vehicles?** *APPLIED ENERGY*
Haugen, M. J., Paoli, L., Cullen, J., Cebon, D., Boies, A. M.
2021; 283
 - **Open-source modelling of aerosol dynamics and computational fluid dynamics: Nodal method for nucleation, coagulation, and surface growth** *COMPUTER PHYSICS COMMUNICATIONS*
Woo, M., Nishida, R. T., Schriebl, M. A., Stettler, M. J., Boies, A. M.
2021; 261
 - **Accelerated measurements of aerosol size distributions by continuously scanning the aerodynamic aerosol classifier** *AEROSOL SCIENCE AND TECHNOLOGY*
Johnson, T. J., Symonds, J. R., Olfert, J. S., Boies, A. M.
2021; 55 (2): 119-141
 - **Photo-rechargeable Zinc-Ion Capacitors using V₂O₅-Activated Carbon Electrodes** *ACS ENERGY LETTERS*
Boruah, B., Wen, B., Nagane, S., Zhang, X., Stranks, S. D., Boies, A., De Volder, M.
2020; 5 (10): 3132-3139
 - **Modelling and evaluation of a biomethane truck for transport performance and cost** *TRANSPORTATION RESEARCH PART D-TRANSPORT AND ENVIRONMENT*
Madhusudhanan, A. K., Na, X., Boies, A., Cebon, D.
2020; 87
 - **High energy density anodes using hybrid Li intercalation and plating mechanisms on natural graphite** *ENERGY & ENVIRONMENTAL SCIENCE*
Son, Y., Lee, T., Wen, B., Ma, J., Jo, C., Cho, Y., Boies, A., Cho, J., De Volder, M.
2020; 13 (10): 3723-3731
 - **Precise Catalyst Production for Carbon Nanotube Synthesis with Targeted Structure Enrichment** *CATALYSTS*
Zhang, X., Deng, Y., Graves, B., De Volder, M., Boies, A.
2020; 10 (9)
 - **High-precision solid catalysts for investigation of carbon nanotube synthesis and structure** *SCIENCE ADVANCES*
Zhang, X., Graves, B., De Volder, M., Yang, W., Johnson, T., Wen, B., Su, W., Nishida, R., Xie, S., Boies, A.
2020; 6 (40)
 - **Thermodynamic and experimental evaluation of a cloud chamber for ultrafine particle detection** *SENSORS AND ACTUATORS A-PHYSICAL*
Yang, W., Boies, A. M.
2020; 310
 - **Weakly Coupled Piezoelectric MEMS Resonators for Aerosol Sensing** *SENSORS*
Chellasivalingam, M., Imran, H., Pandit, M., Boies, A. M., Seshia, A. A.

2020; 20 (11)

- **Measuring the bipolar charge distribution of nanoparticles: Review of methodologies and development using the Aerodynamic Aerosol Classifier** *JOURNAL OF AEROSOL SCIENCE*
Johnson, T. J., Nishida, R. T., Irwin, M., Symonds, J. R., Olfert, J. S., Boies, A. M.
2020; 143
- **Comprehensive characterization of mainstream marijuana and tobacco smoke** *SCIENTIFIC REPORTS*
Graves, B. M., Johnson, T. J., Nishida, R. T., Dias, R. P., Savareear, B., Harynuk, J. J., Kazemimanesh, M., Olfert, J. S., Boies, A. M.
2020; 10 (1): 7160
- **From Collisions to Bundles: An Adaptive Coarse-Grained Model for the Aggregation of High-Aspect-Ratio Carbon Nanotubes** *JOURNAL OF PHYSICAL CHEMISTRY C*
Kateris, N., Kloza, P. A., Qiao, R., Elliott, J. A., Boies, A.
2020; 124 (15): 8359-8370
- **Plasma production of nanomaterials for energy storage: continuous gas-phase synthesis of metal oxide CNT materials <i>via</i> a microwave plasma** *NANOSCALE*
Graves, B., Engelke, S., Jo, C., Baldovi, H. G., De la Verpilliere, J., De Volder, M., Boies, A.
2020; 12 (8): 5196-5208
- **A Simple Method for Measuring Fine-to-Ultrafine Aerosols Using Bipolar Charge Equilibrium** *ACS SENSORS*
Nishida, R. T., Johnson, T. J., Hassim, J. S., Graves, B. M., Boies, A. M., Hochgreb, S.
2020; 5 (2): 447-453
- **High-temperature condensation particle counter using a systematically selected dedicated working fluid for automotive applications** *AEROSOL SCIENCE AND TECHNOLOGY*
Kupper, M., Kraft, M., Boies, A., Bergmann, A.
2020; 54 (4): 381-395
- **MASS TUNING IN WEAKLY COUPLED LOW-Q PIEZOELECTRIC MEMS RESONATOR ARRAYS FOR PARTICULATE SENSING**
Chellasivalingam, M., Graves, B., Boies, A., Seshia, A. A., IEEE
IEEE.2020: 761-764
- **Continuous-Flow Synthesis of Carbon-Coated Silicon/Iron Silicide Secondary Particles for Li-Ion Batteries** *ACS NANO*
Jo, C., Groombridge, A. S., De La Verpilliere, J., Lee, J., Son, Y., Liang, H., Boies, A. M., De Volder, M.
2020; 14 (1): 698-707
- **MEMS Based Gravimetric Sensor for the Detection of Ultra-Fine Aerosol Particles**
Chellasivalingam, M., Somappa, L., Boies, A. M., Baghini, M., Seshia, A. A., IEEE
IEEE.2020
- **Direct spinning of CNT fibres: Past, present and future scale up** *CARBON*
Smail, F., Boies, A., Windle, A.
2019; 152: 218-232
- **The mechanical and electrical properties of direct-spun carbon nanotube mat-epoxy composites** *CARBON*
Tan, W., Stallard, J. C., Smail, F. R., Boies, A. M., Fleck, N. A.
2019; 150: 489-504
- **Agglomeration Dynamics of 1D Materials: Gas-Phase Collision Rates of Nanotubes and Nanorods** *SMALL*
Boies, A. M., Hoecker, C., Bhalerao, A., Kateris, N., de la Verpilliere, J., Graves, B., Smail, F.
2019; 15 (27): e1900520
- **A methodology to relate black carbon particle number and mass emissions** *JOURNAL OF AEROSOL SCIENCE*
Teoh, R., Stettler, M. J., Majumdar, A., Schumann, U., Graves, B., Boies, A. M.
2019; 132: 44-59
- **Using portable emissions measurement systems (PEMS) to derive more accurate estimates of fuel use and nitrogen oxides emissions from modern Euro 6 passenger cars under real-world driving conditions** *APPLIED ENERGY*
Bishop, J. K., Molden, N., Boies, A. M.

2019; 242: 942-973

- **Mapping the parameter space for direct-spun carbon nanotube aerogels** *CARBON*
Weller, L., Smail, F. R., Elliott, J. A., Windle, A. H., Boies, A. M., Hochgreb, S.
2019; 146: 789-812
- **High-fidelity characterization on anisotropic thermal conductivity of carbon nanotube sheets and on their effects of thermal enhancement of nanocomposites** *NANOTECHNOLOGY*
Zhang, X., Tan, W., Smail, F., De Volder, M., Fleck, N., Boies, A.
2018; 29 (36): 365708
- **Continuous flow chemical vapour deposition of carbon nanotube sea urchins** *NANOSCALE*
de La Verpilliere, J., Jessl, S., Saeed, K., Ducati, C., De Volder, M., Boies, A.
2018; 10 (16): 7780-7791
- **Measuring aerosol size distributions with the aerodynamic aerosol classifier** *AEROSOL SCIENCE AND TECHNOLOGY*
Johnson, T. J., Irwin, M., Symonds, J. R., Olfert, J. S., Boies, A. M.
2018; 52 (6): 655-665
- **Measuring ultrafine aerosols by direct photoionization and charge capture in continuous flow** *AEROSOL SCIENCE AND TECHNOLOGY*
Nishida, R. T., Boies, A. M., Hochgreb, S.
2018; 52 (5): 546-556
- **The Dependence of CNT Aerogel Synthesis on Sulfur-driven Catalyst Nucleation Processes and a Critical Catalyst Particle Mass Concentration** *SCIENTIFIC REPORTS*
Hoecker, C., Smail, F., Pick, M., Weller, L., Boies, A. M.
2017; 7: 14519
- **The influence of carbon source and catalyst nanoparticles on CVD synthesis of CNT aerogel** *CHEMICAL ENGINEERING JOURNAL*
Hoecker, C., Smail, F., Pick, M., Boies, A.
2017; 314: 388-395
- **How Well Do We Know the Future of CO₂ Emissions? Projecting Fleet Emissions from Light Duty Vehicle Technology Drivers** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Martin, N. D., Bishop, J. K., Boies, A. M.
2017; 51 (5): 3093-3101
- **Effective density and volatility of particles sampled from a helicopter gas turbine engine** *AEROSOL SCIENCE AND TECHNOLOGY*
Olfert, J. S., Dickau, M., Momenimovahed, A., Saffaripour, M., Thomson, K., Smallwood, G., Stettler, M. J., Boies, A., Sevcenco, Y., Crayford, A., Johnson, M.
2017; 51 (6): 704-714
- **Engine maps of fuel use and emissions from transient driving cycles** *APPLIED ENERGY*
Bishop, J. K., Stettler, M. J., Molden, N., Boies, A. M.
2016; 183: 202-217
- **Quantifying the role of vehicle size, powertrain technology, activity and consumer behaviour on new UK passenger vehicle fleet energy use and emissions under different policy objectives** *APPLIED ENERGY*
Bishop, J. K., Martin, N. D., Boies, A. M.
2016; 180: 196-212
- **Fuel Sulfur and Iron Additives Contribute to the Formation of Carbon Nanotube-like Structures in an Internal Combustion Engine** *ENVIRONMENTAL SCIENCE & TECHNOLOGY LETTERS*
Swanson, J. J., Febo, R., Boies, A. M., Kittelson, D. B.
2016; 3 (10): 364-368
- **Greenhouse Gas and Noxious Emissions from Dual Fuel Diesel and Natural Gas Heavy Goods Vehicles** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Stettler, M. J., Midgley, W. B., Swanson, J. J., Cebon, D., Boies, A. M.
2016; 50 (4): 2018-2026
- **Improved sizing of soot primary particles using mass-mobility measurements** *AEROSOL SCIENCE AND TECHNOLOGY*
Dastanpour, R., Rogak, S. N., Graves, B., Olfert, J., Eggersdorfer, M. L., Boies, A. M.

2016; 50 (2): 101-109

- **Methodology for quantifying the volatile mixing state of an aerosol** *AEROSOL SCIENCE AND TECHNOLOGY*
Dickau, M., Olfert, J., Stettler, M. J., Boies, A., Momenimovahed, A., Thomson, K., Smallwood, G., Johnson, M.
2016; 50 (8): 759-772
- **Catalyst nanoparticle growth dynamics and their influence on product morphology in a CVD process for continuous carbon nanotube synthesis** *CARBON*
Hoecker, C., Smail, F., Bajada, M., Pick, M., Boies, A.
2016; 96: 116-124
- **Energy, carbon dioxide and water use implications of hydrous ethanol production** *ENERGY CONVERSION AND MANAGEMENT*
Saffy, H. A., Northrop, W. F., Kittelson, D. B., Boies, A. M.
2015; 105: 900-907
- **Can UK passenger vehicles be designed to meet 2020 emissions targets? A novel methodology to forecast fuel consumption with uncertainty analysis** *APPLIED ENERGY*
Martin, N. D., Bishop, J. K., Choudhary, R., Boies, A. M.
2015; 157: 929-939
- **Air quality evaluation of London Paddington train station** *ENVIRONMENTAL RESEARCH LETTERS*
Chong, U., Swanson, J. J., Boies, A. M.
2015; 10 (9)
- **Unsteady bipolar diffusion charging in aerosol neutralisers: A non-dimensional approach to predict charge distribution equilibrium behaviour** *JOURNAL OF AEROSOL SCIENCE*
de La Verpilliere, J. L., Swanson, J. J., Boies, A. M.
2015; 86: 55-68
- **Effective Density and Mass-Mobility Exponent of Aircraft Turbine Particulate Matter** *JOURNAL OF PROPULSION AND POWER*
Johnson, T. J., Olfert, J. S., Symonds, J. R., Johnson, M., Rindlisbacher, T., Swanson, J. J., Boies, A. M., Thomson, K., Smallwood, G., Walters, D., Sevcenco, Y., Crayford, A., Dastanpour, et al
2015; 31 (2): 573-582
- **Particle Emission Characteristics of a Gas Turbine with a Double Annular Combustor** *AEROSOL SCIENCE AND TECHNOLOGY*
Boies, A. M., Stettler, M. J., Swanson, J. J., Johnson, T. J., Olfert, J. S., Johnson, M., Eggersdorfer, M. L., Rindlisbacher, T., Wang, J., Thomson, K., Smallwood, G., Sevcenco, Y., Walters, et al
2015; 49 (9): 842-855
- **Response to Comment on "Effects of Ethanol on Vehicle Energy Efficiency and Implications on Ethanol Life-Cycle Greenhouse Gas Analysis"** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Yan, X., Inderwildi, O. R., King, D. A., Boies, A. M.
2014; 48 (16): 9953-9954
- **Cost-effectiveness of alternative powertrains for reduced energy use and CO₂ emissions in passenger vehicles** *APPLIED ENERGY*
Bishop, J. K., Martin, N. D., Boies, A. M.
2014; 124: 44-61
- **Lifecycle greenhouse gas footprint and minimum selling price of renewable diesel and jet fuel from fermentation and advanced fermentation production technologies** *ENERGY & ENVIRONMENTAL SCIENCE*
Staples, M. D., Malina, R., Olcay, H., Pearlson, M. N., Hileman, J. I., Boies, A., Barrett, S. H.
2014; 7 (5): 1545-1554
- **Air Quality and Climate Impacts of Alternative Bus Technologies in Greater London** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Chong, U., Yim, S. L., Barrett, S. H., Boies, A. M.
2014; 48 (8): 4613-4622
- **Updated Correlation Between Aircraft Smoke Number and Black Carbon Concentration** *AEROSOL SCIENCE AND TECHNOLOGY*
Stettler, M. J., Swanson, J. J., Barrett, S. H., Boies, A. M.
2013; 47 (11): 1205-1214
- **Distributed energy resource system optimisation using mixed integer linear programming** *ENERGY POLICY*

Omu, A., Choudhary, R., Boies, A.

2013; 61: 249-266

- **Global Civil Aviation Black Carbon Emissions** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Stettler, M. J., Boies, A. M., Petzold, A., Barrett, S. H.
2013; 47 (18): 10397-10404
- **Effects of Ethanol on Vehicle Energy Efficiency and Implications on Ethanol Life-Cycle Greenhouse Gas Analysis** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Yan, X., Inderwildi, O. R., King, D. A., Boies, A. M.
2013; 47 (11): 5535-5544
- **Quantifying the uncertainties in life cycle greenhouse gas emissions for UK wheat ethanol** *ENVIRONMENTAL RESEARCH LETTERS*
Yan, X., Boies, A. M.
2013; 8 (1)
- **Chemical Kinetics of Photoinduced Chemical Vapor Deposition: Silica Coating of Gas-Phase Nanoparticles** *JOURNAL OF PHYSICAL CHEMISTRY C*
Boies, A. M., Calder, S., Agarwal, P., Lei, P., Girshick, S. L.
2012; 116 (1): 104-114
- **Implications of local lifecycle analyses and low carbon fuel standard design on gasohol transportation fuels** *ENERGY POLICY*
Boies, A. M., McFarlane, D., Taff, S., Watts, W. F., Kittelson, D. B.
2011; 39 (11): 7191-7201