

Hope A. Michelsen

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Educational background

Stanford University Ph.D. major in Chemistry and minor in Physics 1985 – 1993
Dissertation advisors: Prof. Richard N. Zare (Stanford University) and
Dr. Daniel J. Auerbach and Dr. Charles T. Rettner (IBM Almaden Research Center)
Dartmouth College A.B. with High Honors in Chemistry 1979 – 1984
Thesis advisor: Prof. Joseph J. Belbruno (Dartmouth College)

Employment history

University of Colorado Boulder Program faculty, Environmental Engineering 7/20 - present
University of Colorado Boulder Associate professor, Mechanical Engineering 8/19 - present
Sandia National Laboratories Technical staff, Combustion Research Facility 7/99 - 8/19
Atmospheric and Environmental Research, Inc. Staff scientist 12/97 - 6/99
Harvard University Postdoctoral research fellow/research associate 2/93 - 10/97
Stanford University and *IBM Almaden Research Center* Graduate research assistant 6/85 - 1/93
Standard Oil of Ohio Post-graduate research assistant 6/84 - 6/85

Awards and recognition

Fellow of the American Physical Society (APS) 9/19 - present
Fellow of Optica, formerly The Optical Society (OSA) 9/17 - present
Full member of Sigma Xi 12/19 - present
University of Colorado Mechanical Engineering Outstanding Graduate Educator Award 9/23
Distinguished Paper Award, Soot, Nanomaterials, and Large Molecules (Combustion Institute) 4/21
University of Colorado Boulder Research Impact Fellow 1/20 - 10/20
Recipient, Adams Award, Combustion Research Facility, Sandia National Labs 11/18
Awardee, Outstanding Women at Sandia National Laboratories 2/14
Inductee, Alameda County Women's Hall of Fame 1/13
Sandia National Laboratories Employee Recognition Award 6/11
Award for Excellence in Reviewing (American Geophysical Union) 12/03
NASA Group Achievement Awards: POLARIS (ASHOE/MAESA) (ER-2 missions) 9/97 (11/94)
Postdoctoral Research Fellowship in Chemistry (National Science Foundation) 2/93 - 3/95
Nellie Yeoh Whetten Award (American Vacuum Society) 11/92
Student Award (American Vacuum Society) 11/92
Chandler T. White 1916 Research Prize (Dartmouth College) 5/84

Papers or book chapters published, in press, or under review for publication

Atmospheric 56; Combustion 55; Surface sci. 20; Other Chem. 2; Total: 132; *h*-index: Google scholar 56

Service to the community

Editorial Board Member, Progress in Energy and Combustion Science (IF 35.339) 5/23 – present
Organizing Committee, International Sooting Flame Workshop 3/22 - present
Advanced Light Source (ALS) Proposal Study Panel (LBNL, Dept. of Energy) 6/19 - present
Associate Editor, Proceedings of the Combustion Institute 1/18 - present
Linac Coherent Light Source (LCLS) Peer Review Panel (SLAC, Dept. of Energy) 5/17 - present
Advisory Committee, International Workshop on Laser-Induced Incandescence 9/05 - present
Combustion and Fire Systems CAREER Proposal Review Panel (NSF) 10/23
R. W. Wood Prize Selection Committee (Optica) 9/23 – 2/25
Advanced Light Source (ALS) 2030 Visioning Workshop Organizing Committee 5/23 – 10/23
Executive Committee Nominating Committee, Combustion Institute 4/23 – 7/23
Guest Editor, Combustion and Flame Special Issue on Particle Formation 6/21 - 6/23
Tsuji Award Committee, Combustion Institute 9/18 – 6/23
Elected Member of the Advanced Light Source Users' Executive Committee 11/19 – 1/23
Gold Medal Nominating Committee, Combustion Institute 10/19 – 3/22

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| Science Advisory Board, International Sooting Flame Workshop | 2/17 – 3/22 |
| Co-organizer of the Advanced Light Source (ALS) Annual User Meeting | 8/20, 8/21, 8/22 |
| Board of Directors Candidate Nominee, Combustion Institute | 2/22 |
| Member of National Academies Consensus Study Committee | 2/21 - 11/21 |
| Member of Nominating Committee of the APS Group on the Physics of Climate | 10/20 - 2/21 |
| Program Advisory Committee, 38 th International Symposium on Combustion | 9/18 - 3/20 |
| Chair, Colloquium on Soot, 37 th International Symposium on Combustion | 8/18 |
| Chair, Gordon Research Conference on Laser Diagnostics in Combustion | 8/17 |
| Co-organizer, AAAS Global Climate Science Imperatives in a Post-Paris Agreement World | 2/17 |
| Co-chair, Colloquium on Soot, 36 th International Symposium on Combustion | 8/16 |
| Host, 7th International Workshop on Laser-Induced Incandescence of Soot | 6/16 |
| Co-organizer, AGU Annual Meeting, session on Absorbing Aerosols and Climate Impacts | 12/15 |
| Vice chair, Gordon Research Conference on Laser Diagnostics in Combustion | 8/15 |
| Co-organizer, AGU Annual Meeting, session on Greenhouse Gas Source Attribution | 12/14 |
| Topical editor, Applied Optics (The Optical Society, now Optica) | 5/02 - 11/05 |
| SPARC international water vapor assessment panel | 3/99 - 3/00 |
| SAGE II (III) (satellite/space station instruments) science team (NASA) | 1/96 - 4/99 (3/98 - 3/01) |
| TOMS (Total Ozone Mapping Spectrometer instrument) science team (NASA) | 1/98 - 10/01 |
| Co-organizer, AGU Annual Meeting, session on Nonpolar Stratospheric Ozone Depletion | 12/96 |
| ATMOS (space shuttle FTIR solar occultation instrument) science team (NASA) | 3/94 - end |

Classes taught at CU Boulder

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| Thermodynamics 1 (100 students) | Spring 2024 |
| Introduction to Research (48 graduate students) | Fall 2023 |
| Thermodynamics 1 (130 students) | Spring 2023 |
| Introduction to Research (51 graduate students) | Fall 2022 |
| Introduction to Research (60 graduate students) | Fall 2021 |
| Thermodynamics 1 (40 students) | Fall 2021 |
| Thermodynamics 1 (114 students) | Spring 2021 |
| Thermodynamics 1 (96 students) | Fall 2020 |
| Thermodynamics 1 (63 students) | Spring 2020 |

Ph.D. students advised at CU Boulder

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| James Rundel (now at Exponent) | August 2019 – August 2023 |
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M.E. students advised at CU Boulder

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| Chaitanya Ghole (now at Gamma Technologies) | August 2019 – November 2022 |
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Visiting Ph.D. students mentored at Sandia National Labs

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| Emre Cenker | KAUST | Summer 2016 |
| Beth Rieken | Stanford University | 2014 - 2015 |
| Aziz Nanthaamornphong | University of Alabama | 2013 |
| Alexandre Flügl | Universität Erlangen-Nürnberg | 2011 |
| Boman Axelsson | Lund University | Spring 2001 |

Visiting public high school teacher mentored at Sandia National Labs

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| Will Corning | Summer 2011 |
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Undergraduate student intern and then postgrad intern mentored at Sandia National Labs

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| Mark A. Dansson | 2006 - 2007 |
| Mark A. Dansson | Summer 2005 |

Harvey Mudd College Physics Clinic, co-mentored undergraduates at Sandia National Labs

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| Team of 5 undergrads in physics (with Prof. Peter Saeta) | 2005 - 2006 |
| Team of 6 undergrads in physics (with Prof. Peter Saeta) | 2004 - 2005 |

Postdoctoral researchers advised at Sandia National Labs

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|---------------------------------------------------------|-------------|
| K. Olof Johansson (now at KLA Corporation) | 2013 - 2018 |
| Matthew F. Campbell (now at University of Pennsylvania) | 2014 - 2016 |

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| Zhen Liu (now at California Air Resources Board) | 2012 - 2015 |
| Xerxes López-Iglesias (now at General Biotics) | 2012 - 2013 |
| Andrew R. Metcalf (now at Clemson University) | 2012 - 2013 |
| Scott A. Skeen (now at Utah Tech University) | 2010 - 2013 |
| Jeffrey M. Headrick (now at Picarro, Inc.) | 2010 - 2012 |
| Anthony Gomez (now at Southwest Sciences, Inc.) | 2007 - 2010 |
| Fabian Goulay (now at West Virginia University) | 2007 - 2010 |
| Michael Y. Gershenzon (now at The Kraft Heinz Company) | 2003 - 2005 |

Professional organizations

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| American Chemical Society | 1992 - present |
| American Geophysical Union | 1993 - present |
| American Association for the Advancement of Science | 1993 - present |
| Optica (formerly The Optical Society, OSA) (Fellow) | 2002 - present |
| Yoga Alliance (Registered Yoga Teacher) | 2007 - present |
| Combustion Institute | 2009 - present |
| American Physical Society (Fellow) | 2016 - present |
| American Association for Aerosol Research | 2016 - present |
| Sigma Xi (Full Member) | 2019 - present |
| American Institute of Aeronautics and Astronautics | 2023 - present |

Patents

R. P. Bambha and H. A. Michelsen, "Method and system for multi-pass laser-induced incandescence", *U. S. Patent Office*, Application no. 15239634 (August 17, 2016), U.S. Patent 10067049 Issued 2018.

Recent invited conference talks and lectureships

- H. A. Michelsen, "My Career and This Game Called Life", *American Institute for Aeronautics and Astronautics (AIAA) SciTech Forum and Exposition 2024*, Orlando, FL (January 2024).
- H. A. Michelsen, "Diagnostics for Electrochemical Energy Conversion and Storage", *Gordon Research Conference on Laser Diagnostics in Energy and Combustion Science*, Topical overview and discussion lead, Newry, ME (July 2023).
- H. A. Michelsen, "Particle Formation, Evolution, and Fate", *2023 Summer School on Combustion and the Environment*, Princeton, NJ (June 2023).
- H. A. Michelsen, "Tracking and Controlling Inception Through Pyrolysis", *6th International Sooting Flames Workshop*, Vancouver, Canada (July 2022).
- H. A. Michelsen, "A Discussion of Terminology to Describe Soot", *5th International Sooting Flames Workshop*, Adelaide, Australia (remote) (January 2021).
- H. A. Michelsen, "Soot Particles: So Ubiquitous, So Destructive, So Important, Yet So Elusive", *American Association of Aerosol Research Annual Meeting*, Plenary talk, Portland, OR (October 2019).
- H. A. Michelsen, "Using X-Ray Tools to Solve the Mystery of Soot Formation", *Advanced Light Source Annual Users' Meeting, Session on Challenges and Opportunities for Soft X-Ray Spectroscopy of Interfaces and Bulk Materials for Energy Applications*, Berkeley, CA (October 2019).
- H. A. Michelsen, "Finding the Smoking Gun: Solving the Mystery of Soot Formation", *American Chemical Society Annual Meeting*, San Diego, CA (August 2019).
- H. A. Michelsen, "Using VUV and X-Ray Tools to Solve the Mystery of Soot Formation", *The 40th International Conference on Vacuum Ultraviolet and X-Ray Physics*, Plenary talk, San Francisco, CA (July 2019).
- H. A. Michelsen, "Soot Formation, Growth, and Global Impact: The Life Story of a Mass Murderer", *11th U. S. National Combustion Meeting*, Plenary talk, Pasadena, CA (March 2019).
- H. A. Michelsen, "Mysteries of High-Temperature Particle Formation: Soot, Interstellar Dust, and Novel Materials", *LCLS-II-HE Workshop*, Menlo Park, CA (October 2018).

- H. A. Michelsen, "Probing Soot Formation and Chemical Evolution During Combustion", *Fundamentals in Optics/Laser Science (OSA/APS)*, Washington, DC (September 2018).
- H. A. Michelsen, "Soot Inception: What do we know, and where do we go from here?", *4th International Sooting Flames Workshop*, Keynote talk, Dublin, Ireland (July 2018).
- K. O. Johansson and H. A. Michelsen, "Probing Soot Formation and Chemical Evolution During Combustion", *CLEO*, San Jose, CA (May 2018).
- H. A. Michelsen, "Probing Combustion Chemistry Using Hard X-Rays: Needs, Challenges, and Opportunities", *LCLS-II-HE Workshop*, Menlo Park, CA (September 2016).
- H. A. Michelsen, "Topical Overview: Probing Soot Formation, Chemical and Physical Evolution, and Oxidation: A Review of Diagnostic Techniques and Needs", *36th International Symposium on Combustion*, Seoul, South Korea (August 2016).

Peer-reviewed publications (*corresponding authors)

132. A. S. Makowiecki, S. C. Coburn, S. Sheppard, B. Bitterlin, T. Breda, A. Dawlatzai, R. Giannella, A. Jaros, C. Kling, E. Kolb, C. Lapointe, S. Simons-Wellin, H. A. Michelsen, J. W. Daily, M. Hannigan, P. E. Hamlington, J. Farnsworth, and G. B. Rieker*, "WindCline: Sloping wind tunnel for characterizing flame behavior under variable inclines and wind conditions", *Rev. Sci. Instrum.*, **XX**, submitted (2023) DOI:.
131. J. Hendrix*, D. Hait, H. A. Michelsen*, and M. Head-Gordon*, "Hydrogen ejection from hydrocarbons: Characterization and relevance in soot formation and interstellar chemistry", *Proc. Natl. Acad. Sci. USA*, **XX**, submitted (2023) DOI:.
130. R. P. Lindstedt*, H. A. Michelsen*, and M. E. Mueller*, "Special issue and perspective on the chemistry and physics of carbonaceous particle formation", *Combust. Flame* **258**(1), 113042 (2023) DOI: 10.1016/j.combustflame.2023.113042.
129. J. A. Rundel, C. Martí, J. Zádor, P. E. Schrader, K. O. Johansson, R. P. Bambha, G. T. Buckingham, J. P. Porterfield, O. Kostko, and H. A. Michelsen*, "The identity and chemistry of C₇H₇ radicals observed during soot formation", *J. Phys. Chem. A*, **127**(13), 3000-3019 (2023) DOI: 10.1021/acs.jpca.2c08949.
128. C. Martí, H. A. Michelsen, H. N. Najm, and J. Zádor*, "Comprehensive kinetics on the C₇H₇ potential energy surface under combustion conditions", *J. Phys. Chem. A*, **127**(8), 1941-1959 (2023) DOI: 10.1021/acs.jpca.2c08035.
127. J. Zádor*, C. Martí, R. Van de Vijver, S. L. Johansen, Y. Yang, H. A. Michelsen, and H. N. Najm, "Automated reaction kinetics of gas-phase organic species over multiwell potential energy surfaces", *J. Phys. Chem. A*, **127**(3), 565-588 (2023) DOI: 10.1021/acs.jpca.2c06558.
126. J. A. Rundel, K. O. Johansson, P. E. Schrader, R. P. Bambha, K. R. Wilson, J. Zádor, G. B. Ellison, and H. A. Michelsen*, "Production of aliphatic-linked polycyclic hydrocarbons during radical-driven particle formation from propyne and propene pyrolysis", *Combust. Flame* **258**(1), 112457 (2023) DOI: 10.1016/j.combustflame.2022.112457.
125. H. A. Michelsen*, E. Boigné*, P. E. Schrader, K. O. Johansson, M. F. Campbell, R. P. Bambha, and M. Ihme, "Jet-entrainment sampling: A new method for extracting particles from flames", *Proc. Combust. Inst.*, **39**, 847-855 (2023) DOI: 10.1016/j.proci.2022.07.140.
124. H. A. Michelsen*, M. F. Campbell, K. O. Johansson, I. C. Tran, P. E. Schrader, R. P. Bambha, E. Cenker, J. A. Hammons, E. Schaible, C. Zhu, and A. van Buuren, "Soot particle core-shell and fractal structures from small-angle X-ray scattering measurements in a flame", *Carbon*, **196**, 440-456 (2022) DOI: 10.1016/j.carbon.2022.05.009.
123. H. A. Michelsen*, M. F. Campbell, I. C. Tran, K. O. Johansson, P. E. Schrader, R. P. Bambha, J. A. Hammons, E. Schaible, C. Zhu, and A. van Buuren, "Distinguishing gas-phase and nanoparticle contributions to small-angle X-ray scattering in reacting aerosol flows", *J. Phys. Chem. A*, **126**, 3015-3026 (2022) DOI:10.1021/acs.jpca.2c00454. Chosen by ALS to highlight as a brief: <https://als.lbl.gov/distinguishing-nanoparticles-from-gas-phase-species-in-reacting-flows/>

Only ~4% of papers from ALS are highlighted each year.

122. J. A. Rundel, C. M. Thomas, P. E. Schrader, K. R. Wilson, K. O. Johansson, R. P. Bambha, and H. A. Michelsen*, "Promotion of particle formation by resonance-stabilized radicals during hydrocarbon pyrolysis", *Combust. Flame*, **243**, 111942 (2022) DOI:10.1016/j.combustflame.2021.111942.
121. G. Villalba*, M. Whelan, S. Monzka, P. J. Cameron-Smith, M. Fischer, A. Zumkehr, T. Hilton, J. Stinecipher, I. Baker, R. P. Bambha, H. A. Michelsen, B. W. LaFranchi, C. Estruch, and E. Campbell, "Exploring the potential of using carbonyl sulfide to track the urban biosphere signal", *J. Geophys. Res.*, **126(13)**, e2020JD034106 (2021) DOI:10.1029/2020JD034106.
120. H. A. Michelsen*, "Effects of maturity and temperature on soot density and specific heat", *Proc. Combust. Inst.*, **38**, 1197-1205 (2021) DOI: 10.1016/j.proci.2020.06.383; Distinguished Paper Award.
119. H. A. Michelsen*, M. B. Colket, P.-E. Bengtsson, A. D'Anna, P. Desgroux, B. S. Haynes, J. H. Miller, G. J. Nathan, H. Pitsch, and H. Wang, "A review of terminology used to describe soot formation and evolution under combustion and pyrolytic conditions", *ACS Nano*, **14**, 12470-12490 (2020) DOI: 10.1021/acsnano.0c06226.
118. Q. Wang, P. Elvati, D. Kim, K. O. Johansson, P. E. Schrader, H. A. Michelsen*, and A. Violi*, "Spatial dependence of polycyclic aromatic compound growth in counterflow flames", *Carbon*, **149**, 328-335 (2019) DOI: 10.1016/j.carbon.2019.03.017.
117. K. O. Johansson*, M. P. Head-Gordon, P. E. Schrader, K. R. Wilson, and H. A. Michelsen*, "Resonance-stabilized hydrocarbon-radical chain reactions may explain soot inception and growth", *Science* **361**, 997-1000 (2018) DOI: 10.1126/science.aat3417.
116. H. Graven*, M. L. Fischer, T. Lueker, S. Jeong, T. P. Guilderson, R. F. Keeling, R. P. Bambha, K. Brophy, W. Callahan, X. Cui, C. Frankenberg, K. R. Gurney, B. W. LaFranchi, S. J. Lehman, H. A. Michelsen, J. B. Miller, S. Newman, W. Paplawsky, N. C. Parazoo, C. Sloop, and S. J. Walker, "Assessing fossil fuel CO₂ emissions in California using atmospheric observations and models", *Environ. Res. Lett.* **13**, 065007 (2018) DOI: 10.1088/1748-9326/aabd43.
115. M. F. Campbell, P. E. Schrader, A. L. Catalano, K. O. Johansson, G. A. Bohlin, N. K. Richards-Henderson, C. J. Kliewer, and H. A. Michelsen*, "A small porous-plug burner for studies of combustion chemistry and soot formation", *Rev. Sci. Instrum.* **88**, 125106 (2017) DOI: 10.1063/1.5016212.
114. K. O. Johansson, F. El Gabaly, P. E. Schrader, M. F. Campbell, and H. A. Michelsen*, "Evolution of maturity levels of particle surface and bulk during soot growth and oxidation in a flame", *Aerosol Sci. Technol.* **51(12)**, 1333-1344 (2017) DOI: 10.1080/02786826.2017.1355047.
113. K. O. Johansson*, M. F. Campbell, P. Elvati, P. E. Schrader, J. Zádor, N. K. Richards-Henderson, K. R. Wilson, A. Violi, and H. A. Michelsen*, "Photoionization efficiencies of five polycyclic aromatic hydrocarbons", *J. Phys. Chem. A* **121(23)**, 4447-4454 (2017) DOI: 10.1021/acs.jpca.7b02991.
112. K. O. Johansson*, J. Zádor, P. Elvati, M. F. Campbell, P. E. Schrader, N. K. Richards-Henderson, K. R. Wilson, A. Violi, and H. A. Michelsen*, "Critical assessment of photoionization efficiency measurements for characterization of soot-precursor species", *J. Phys. Chem. A* **121(23)**, 4475-4485 (2017) DOI: 10.1021/acs.jpca.7b02992.
111. Y. Y. Cui*, J. Brioude, W. M. Angevine, S. A. McKeen, S.-W. Kim, J. Peischl, J. A. Neuman, D. Henze, N. Bousserez, M. L. Fischer, S. Jeong, Z. Liu, R. P. Bambha, H. A. Michelsen, G. W. Santoni, B. C. Daube, E. A. Kort, G. J. Frost, T. B. Ryerson, S. C. Wofsy, and M. Trainer, "Top-down estimate of methane emissions in California using a mesoscale inverse modeling technique: The San Joaquin Valley", *J. Geophys. Res.* **122(6)**, 3686-3699 (2017) DOI: 10.1002/2016JD026398.
110. S. Jeong*, X. Cui, D. R. Blake, B. Miller, S. Montzka, A. E. Andrews, A. Guha, P. Martien, R. P. Bambha, B. F. LaFranchi, H. A. Michelsen, C. Clements, P. Glaize, and M. L. Fischer, "Estimating methane emissions from biological and fossil-fuel sources in the San Francisco Bay Area", *Geophys. Res. Lett.* **44**, 486-495 (2017) DOI: 10.1002/2016GL071794.

109. H. A. Michelsen*, "Probing soot formation, chemical and physical evolution, and oxidation: A review of *in situ* diagnostic techniques and needs", *Proc. Combust. Inst.* **36**, 717-735 (2017) DOI: 10.1016/j.proci.2016.08.027.
108. K. O. Johansson, T. Dillstrom, P. Elvati, M. F. Campbell, P. E. Schrader, D. M. Popolan-Vaida, N. K. Richards-Henderson, K. R. Wilson, A. Violi, and H. A. Michelsen*, "Radical-radical reactions, pyrene nucleation, and incipient soot formation in combustion", *Proc. Combust. Inst.* **36**, 799-806 (2017) DOI: 10.1016/j.proci.2016.07.130.
107. S. Jeong*, S. Newman, J. Zhang, A. E. Andrews, L. Bianco, J. Bagley, X. Cui, H. Graven, J. Kim, P. Salameh, B. F. LaFranchi, C. Priest, M. Campos-Pineda, E. Novakovskaia, C. D. Sloop, H. A. Michelsen, R. P. Bambha, R. F. Weiss, R. Keeling, and M. L. Fischer, "Estimating methane emissions in California's urban and rural regions using multi-tower observations", *J. Geophys. Res. Atmos.* **121**, 13,031-13,049 (2016) DOI: 10.1002/2016JD025404.
106. M. F. Campbell, A. Bohlin, P. E. Schrader, R. P. Bambha, C. J. Kliewer, K. O. Johansson, and H. A. Michelsen*, "Design and characterization of a linear Hencken-type burner", *Rev. Sci. Instrum.* **87**, 115114 (2016) DOI: 10.1063/1.4967491.
105. K. O. Johansson, T. Dillstrom, M. F. Campbell, M. Monti, F. El Gabaly, P. E. Schrader, D. M. Popolan-Vaida, N. K. Richards-Henderson, K. R. Wilson, A. Violi*, and H. A. Michelsen*, "Formation and emission of large furans and oxygenated hydrocarbons from flames", *Proc. Natl. Acad. Sci. USA* **113**, 8374-8379 (2016) DOI: 10.1073/pnas.1604772113.
104. R. P. Bambha and H. A. Michelsen*, "Effects of aggregate morphology and size on laser-induced incandescence and scattering from black carbon (mature soot)", *J. Aerosol Sci.* **88**, 159-181 (2015) DOI: 10.1016/j.jaerosci.2015.06.006.
103. H. A. Michelsen, C. Schulz, G. J. Smallwood, and S. Will*, "Laser-induced incandescence: Particulate diagnostics for combustion, atmospheric, and industrial applications", *Progress Energy Combust. Sci.* **51**, 2-48 (2015) DOI: 10.1016/j.pecs.2015.07.001.
102. K. O. Johansson, J. Y. W. Lai, S. A. Skeen, D. M. Popolan-Vaida, K. R. Wilson, N. Hansen, A. Violi, and H. A. Michelsen*, "Soot precursor formation and limitations of the stabilomer grid", *Proc. Combust. Inst.* **35**, 1819-1826 (2015) DOI: 10.1016/j.proci.2014.05.033.
101. A. Nanthamornphong, J. C. Carver, K. Morris, H. A. Michelsen, and D. W. I. Rouson*, "Building CLiME via test-driven development: A case study", *Comput. Sci. Eng.* **16(3)**, 36-46 (2014).
100. X. López-Yglesias, P. E. Schrader, and H. A. Michelsen*, "Soot maturity and absorption cross sections", *J. Aerosol Sci.* **75**, 43-64 (2014) DOI: 10.1016/j.jaerosci.2014.04.011.
99. N. Hansen*, S. A. Skeen*, H. A. Michelsen*, K. R. Wilson*, and K. Kohse-Höinghaus*, "Flame experiments at the Advanced Light Source: New insights into soot formation processes", *Journal of Visualized Experiments (JoVE)* **87**, e51369 (2014) DOI: 10.3791/51369.
98. Z. Liu, R. P. Bambha*, J. Pinto, T. Zeng, J. Boylan, M. Huang, H. Lei, C. Zhao, S. Liu, J. Mao, C. Schwalm, X. Shi, Y. Wei, and H. A. Michelsen, "Toward verifying fossil fuel CO₂ emissions from the CMAQ model: Motivation, model description, and initial simulation", *J. Air Waste Manage. Assoc.* **64(4)**, 419-435 (2014) DOI: 10.1080/10962247.2013.816642.
97. R. P. Bambha, M. A. Dansson, P. E. Schrader, and H. A. Michelsen*, "Effects of volatile coatings on the laser-induced incandescence of soot", *Appl. Phys. B* **112(3)**, 343-358 (2013).
96. R. P. Bambha, M. A. Dansson, P. E. Schrader, and H. A. Michelsen*, "Effects of volatile coatings and coating removal mechanisms on the morphology of graphitic soot", *Carbon* **61**, 80-96 (2013).
95. F. Goulay, P. E. Schrader, X. López-Yglesias, and H. A. Michelsen*, "A dataset for validation of models of laser-induced incandescence from soot: Temporal profiles of LII signal and particle temperature", *Appl. Phys. B* **112(3)**, 287-306 (2013).
94. J. M. Headrick, P. E. Schrader, and H. A. Michelsen*, "Radial-profile and divergence measurements of combustion-generated soot focused by an aerodynamic-lens system", *J. Aerosol Sci.* **58**, 158-170 (2013).

93. S. A. Skeen, H. A. Michelsen, K. R. Wilson, D. M. Popolan, A. Violi, and N. Hansen*, "Near-threshold photoionization mass spectra of combustion-generated high-molecular-weight soot precursors", *J. Aerosol Sci.* **58**, 86-102 (2013). DOI: 10.1016/j.jaerosci.2012.12.008.
92. S. A. Skeen, B. Yang, H. A. Michelsen, J. A. Miller, A. Violi, and N. Hansen*, "Studies of laminar opposed-flow diffusion flames of acetylene at low pressures with photoionization mass spectrometry", *Proc. Combust. Inst.* **34**, 1067-1075 (2013).
91. H. A. Michelsen*, P. E. Schrader, and F. Goulay, Erratum to "Wavelength and temperature dependences of the absorption and scattering cross sections of soot" [Carbon 48 (2010) 2175-2191], *Carbon* **50**, 740 (2012).
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