

Curriculum Vitae – Nir Bluvshstein

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Languages: German – A2 (and learning), English – fluent, Hebrew – native



EDUCATION

- 2011/Mar. - 2016/Dec. **PhD:** “*Broadband optical properties and brown carbon chromophores of ambient atmospheric aerosol*” Weizmann Institute of Science, Israel; Advisor: Y. Rudich.
Experimental work including design and construction of optical instruments for detection of aerosol light absorption and scattering, planning and performing laboratory and field measurements, planning and managing field campaigns which include cooperation between several international research groups
- 2007/Oct. - 2011/Feb. **MSc:** “*Examining the influence of two anthropogenic factors, agricultural & industrial, on the north Hula Valley air quality*” The Hebrew University of Jerusalem; Advisor: Y. Mahrer.
- 2004/Oct. - 2007/Jul. **BSc:** in Environmental Sciences, bachelor thesis: “*comparison of nonequilibrium adsorption-desorption reaction models in porous medium flow*” Tel Hai College, Israel; Advisor: G. Ritwo.

EMPLOYMENT HISTORY & TEACHING EXPERIENCE

- 2020/Sep-present **Lecturer**, Institute for Atmospheric and Climate Science (IAC), ETH Zürich.
Introduction to air pollution and atmospheric chemistry, climate module as part of the Master program in Landscape Architecture.
- 2020/Mar – Present **Senior Scientist**, Institute for Atmospheric and Climate Science (IAC), ETH Zürich
Focus: Dynamic light scattering used for analysis of the mixing state and composition of multicomponent aerosols.
- 2018/Mar – 2020/Feb **Postdoctoral Researcher**, Institute for Atmospheric and Climate Science (IAC), ETH Zürich
Focus: high sensitivity measurements of light absorption by a single particle.
- 2017/Jan. – 2018/Feb **Postdoctoral Researcher**, Weizmann institute of science, Department of Earth and Planetary Sciences
Focus: Broadband optical properties and chemical composition of biomass burning organic aerosols; Design and construction of a novel UV-Vis broad-spectrum nephelometer and biomass burning combustion chamber for production of primary and secondary biomass burning organic aerosols.
- 2010 **Lecturer**, Tel-Hai College, Faculty of Sciences and technology
Course: Introduction to climatology and weather systems
- 2007/Feb. – 2011/Jan. **Laboratory Instructor, Teaching assistant**, Tel-Hai College, Faculty of Sciences and technology
Courses: thermodynamic and physical chemistry, introduction to hydrology, spectroscopy, physics 1 and 2, introduction to climatology and weather systems, physics laboratory, analytical chemistry.

2004/Oct. – 2017/Jun. **Science Teacher, Laboratory Instructor and tutor**, teaching science programs to high school and elementary school students.

- Davidson Institute of Science Education; Rehovot, Israel.
- Association for the advancement of science education; Galilee, Israel.

INSTITUTIONAL RESPONSIBILITIES & OUTREACH

2019-present **Representative, Atmospheric Chemistry Group, Postdoc & Senior Scientist Committee**, IAC, ETH Zürich

2019-2020 **Co-convenor, Career development workshop (postponed), Postdoc & Senior Scientist Committee**, IAC, ETH Zürich

APPROVED RESARCH PROJECTS

2020/May Assisting Autor; Swiss National Science Foundation, NPR 78; “*Acidic pH inactivation of SARS-CoV-2 in exhaled aerosol, expectoration and fomites (ApHiCoV)*” (31CA30_196729). Budget awarded 1,000,452 CHF.

2019/Dec. Single Autor; Swiss National Science Foundation Grant; “*Photophoretic spectroscopy in atmospheric chemistry – high sensitivity measurements of light absorption by a single particle*” (CRSK-2_190477). Budget awarded 100,000 CHF.

2017/Dec. Single Autor; ETH Zurich Postdoctoral Fellowships; “*Identification of liquid–liquid phase separation in accumulation mode aerosols by its effect on the particles’ optical properties*”. Budget awarded 228,300 CHF.

AWARDS

2011 M.Sc. graduation with excellence, The Hebrew university of Jerusalem 2011

2008 M.Sc. Excellence program tuition scholarship, The Hebrew university of Jerusalem

2007 M.Sc. Excellence program tuition scholarship, The Hebrew university of Jerusalem

2007 B.Sc. graduation with excellence, Tel-Hai College

2006 B.Sc. Excellence program tuition scholarship, Tel-Hai College

2004 B.Sc. Excellence program tuition scholarship, Tel-Hai College

MANUSCRIPS REVIEWED FOR

Journal of Geophysical Research – Atmosphere (JGR-Atmosphere); Environmental Science & Technology Letters (EST letters); Atmospheric Chemistry and Physics (ACP); Atmospheric Measurement Techniques (AMT); Analytical Chemistry.

CONFERENCES & INVITED SEMINARS

2020/May. **Co-Convenor:** *Photochemistry of aqueous phase organic matter in atmospheric and aquatic environments*. European Geosciences Union General Assembly (Vienna, Austria).

2020/May. **Talk:** *Photophoresis used for measurements of light absorption by a single particle*. European Geosciences Union General Assembly (Vienna, Austria).

2020/Feb. **Invited talk:** *Measurements of aerosol light absorption – from ensemble to single particle techniques*. LAC seminar, Paul Scherrer Institute (Villigen, Switzerland)

2019/Jul. **Poster:** *Photophoresis used for measurements of light absorption by a single particle*. Gordon Research Conference in Atmospheric Chemistry (Maine, USA)

- 2019/Jul. **Talk:** *Photophoresis used for measurements of light absorption by a single particle*. ACCESS XV, 15th Atmospheric Chemistry Colloquium for Emerging Senior Scientists (New York, USA)
- 2019/Jul. **Invited talk:** *Measurements of aerosol light absorption – from ensemble to single particle techniques*. Extraordinary seminar, School of Marine and Atmospheric sciences, Stony Brook University (New York, USA)
- 2019/Apr. **Poster:** *Photophoresis used for measurements of light absorption by a single particle*. International Conference on Carbonaceous Particles in the Atmosphere (Vienna, Austria)
- 2018/Oct. **Invited talk:** *Aerosols-Radiation interaction and its effects on climate*. IAC colloquium, ETH Zurich (Zurich, Switzerland)
- 2018/Aug. **Poster:** *Towards using the photophoresis for measurements of light absorption by a single particle*. Towards a Molecular Understanding of Atmospheric Aerosols (Bad Honnef, Germany)
- 2017/Mar. **Talk:** *Broadband optical properties of biomass burning aerosol and identification of brown carbon chromophores*. Annual Meeting of the Israeli Association of Aerosol Research (Haifa, Israel)
- 2017/Jun. **Poster:** *Broadband optical properties of biomass burning aerosol and identification of brown carbon chromophores*. 12th International Meeting on Cavity Enhanced Spectroscopy (Egmond aan Zee, Netherlands)
- 2016/Apr. **Talk:** *Determination of the broadband optical properties of biomass burning aerosol*. European Geosciences Union General Assembly (Vienna, Austria)

PUBLICATIONS

1. **Bluvshstein, N.**, Krieger, K.U., and Thomas, P., 2020. Photophoretic spectroscopy in atmospheric chemistry – high sensitivity measurements of light absorption by a single particle. *Atmospheric Measurement Techniques*, 13, 3191–3203, DOI: 10.5194/amt-13-3191-2020.
2. **Bluvshstein, N.**, Villacorta, E., Li C., Hagen., B.C., Frette, V., and Rudich, Y., 2020. Early detection of smoldering in silos: organic material emissions as precursors. *Fire Safety Journal*, DOI: 10.1016/j.firesaf.2020.103009.
3. He, Q.F., **Bluvshstein, N.**, Segev, L., Meidan, D., Flores, J.M., Brown, S.S., Brune, W. and Rudich, Y., 2018. Evolution of the Complex Refractive Index of Secondary Organic Aerosols during Atmospheric Aging. *Environmental Science & Technology*, 52(6): 3456-3465.
4. **Bluvshstein, N.**, Flores, J.M., He, Q.F., Segre, E., Segev, L., Hong, N.N., Donohue, A., Hilfiker, J.N. and Rudich, Y., 2017. Calibration of a multi-pass photoacoustic spectrometer cell using light-absorbing aerosols. *Atmospheric Measurement Techniques*, 10(3): 1203-1213.
5. **Bluvshstein, N.**, Lin, P., Flores, J.M., Segev, L., Mazar, Y., Tas, E., Snider, G., Weagle, C., Brown, S.S., Laskin, A. and Rudich, Y., 2017. Broadband optical properties of biomass-burning aerosol and identification of brown carbon chromophores. *Journal of Geophysical Research-Atmospheres*, 122(10): 5441-5456.
6. Lin, P., **Bluvshstein, N.**, Rudich, Y., Nizkorodov, S.A., Laskin, J. and Laskin, A., 2017. Molecular Chemistry of Atmospheric Brown Carbon Inferred from a Nationwide Biomass Burning Event. *Environmental Science & Technology*, 51(20): 11561-11570.
7. **Bluvshstein, N.**, Flores, J.M., Segev, L. and Rudich, Y., 2016. A new approach for retrieving the UV-vis optical properties of ambient aerosols. *Atmospheric Measurement Techniques*, 9(8): 3477-3490.
8. Flores, J.M., Zhao, D.F., Segev, L., Schlag, P., Kiendler-Scharr, A., Fuchs, H., Watne, A.K., **Bluvshstein, N.**, Mentel, T.F., Hallquist, M. and Rudich, Y., 2014. Evolution of the complex refractive index in the UV spectral region in ageing secondary organic aerosol. *Atmospheric Chemistry and Physics*, 14(11): 5793-5806.
9. Lavi, A., **Bluvshstein, N.**, Segre, E., Segev, L., Flores, M. and Rudich, Y., 2013. Thermochemical, Cloud Condensation Nucleation Ability, and Optical Properties of Alkyl Aminium Sulfate Aerosols. *Journal of Physical Chemistry C*, 117(43): 22412-22421.
10. **Bluvshstein, N.**, Flores, J.M., Riziq, A.A. and Rudich, Y., 2012. An Approach for Faster Retrieval of Aerosols' Complex Refractive Index Using Cavity Ring-Down Spectroscopy. *Aerosol Science and Technology*, 46(10): 1140-1150.

11. Flores, J.M., Bar-Or, R.Z., **Bluvshtein, N.**, Abo-Riziq, A., Kostinski, A., Borrmann, S., Koren, I. and Rudich, Y., 2012. Absorbing aerosols at high relative humidity: linking hygroscopic growth to optical properties. *Atmospheric Chemistry and Physics*, 12(12): 5511-5521.
12. **Bluvshtein, N.**, Mahrer, Y., Sandler, A. and Rytwo, G., 2011. Evaluating the impact of a limestone quarry on suspended and accumulated dust. *Atmospheric Environment*, 45(9): 1732-1739.
13. Rytwo, G., Varman, H., **Bluvshtein, N.**, Konig, T.N., Mendelovits, A. and Sandler, A., 2011. Adsorption of berberine on commercial minerals. *Applied Clay Science*, 51(1-2): 43-50.