CURRICULUM VITAE

Masoud Ghandehari, PhD

May 2018

Masoud Ghandehari
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1. CAREER SUMMARY

Research Focus

My research activities are focused on sensing, instrumentation, data acquisition and analysis, with applications to civil infrastructure. This work is directed toward a fundamental understanding of the health and performance of the built environment, as well as the interdependencies across human and natural systems. The foundation of my current work was the development of chemical and optical sensing techniques and their application to infrastructure performance and health, with an emphasis on the quantitative assessment of infrastructure materials in their environment, at both micro and meso scales. My research has now expanded to the macro and city scale; I am working on the quantitative analysis of the impact of human habitation (emissions, urban thermodynamics, waste and energy use) on the sustainability and livability of the built environment. I am interested in multidisciplinary research, developing taxonomies to define system interdependencies, and data platforms to address complex interdependent phenomena in cities across structural, environmental and human dimensions. I enjoy both teaching and field work. I have been successful in disseminating this research through collaborations with the industry and government sectors while gaining experience in direct applications of urban research. While the approach to urban physics in the macro scale has fundamental similarities with the micro and meso scale material science, the urban application (nearly 5 spatial orders of magnitude larger) introduces new challenges with potentially ground breaking possibilities. I expect this will contribute to a shift in the field of civil and urban engineering.

Current Research Projects

- Quantitative assessment and modeling of urban thermodynamics
  (NATURE Sci Report, Feb 2018)
- Spectroscopic imaging of the urban atmosphere
  (NATURE Sci Report May 2017)
- Emissions and correlative factors impacting pollution exposure
  (NATURE Communication October 2018)
- IOT and Urban Sensing
  (IEEE, Internet of Things Journal, 2018)
- Data driven characterization of systems interdependencies in extreme conditions
  (NSF CRISP: Critical Resilient Interdependent Systems & Processes - awarded August. 2018)

2. EDUCATION AND EMPLOYMENT

Education

Ph.D.	Northwestern University, Civil & Environmental Eng., 1998	
M.S.	McGill University, Civil Engineering, 1993	
B.S.	Columbia University, Civil Eng. & Applied Mechanics, 1988	

Professional Appointments

NYU	Associate Professor, Tandon School of Engineering	2008 - Present
NYU	Head of Urban Observatory, CUSP	2013 - 2017
NYU	Assistant Professor, NYU Polytechnic	2000 - 2007
Northwestern Univ.	Postdoctoral Fellow	1998 - 1999
Weidlinger Assoc.	Project Engineer	1989 - 1991
Geiger Engineers	Design Engineer	1988 - 1989

3. AWARDS, GRANTS AND CONTRACTS

- **National Science Foundation**

  - CRISP: Integrated Socio-Technical Modeling Framework to Evaluate and Enhance Resiliency in Islanded Communities (ERIC), award # 1832678, 2018-2021
    $2,100,000 (NYU share $750,000). Ghandehari Co-PI, Collaboration with PI Jorge Gonzalez (CUNY), Co-PI Agamy Reddy (ASU), and Co-PI Eric Klinenberg (NYU Arts and Science).

  - IUCRC (Industry University Collaborative Research Center) Planning Grant for:
    Center for Building Energy Smart Technologies (BEST).
    $30,000, 8/2018-12/2018. Full proposal due 12/2018. An East-West Collaborative, BEST East CUNY and NYU (PI Gonzalez Co-PI Ghandehari), BEST West UC Boulder and ASU (PI Krarti, Co-PI Reddy).

  - Imaging High pH Driven Degradation in Infrastructure Materials, award # 1014926, 2010-2013
    $400,000 (NYU share $290,000), Ghandehari PI, Collaboration with Co-PI Christian Bruckner (UConn Storrs Chemistry), Co-PI Weihua JIn (NYU Tandon)

  - Functional Optical Probes for Monitoring the Subsurface Environment, award #0627312, 2007-2008
    $45,870, Ghandehari PI, Collaboration with Co-PI Dino Kostarelos (previously at NYU, currently at University of Huston)

  - International Education: US-Germany Collaboration – Early Detection of Materials Degradation, award #0340606, 2004-2005
    $35,600, Ghandehari PI

  - Optical Chemo Sensing for Civil and Mechanical Systems, award # 0215620, 2002-2003

$40,000, Ghandehari PI

- **Consolidated Edison**
  - Forecasting the NYC Electric Power Infrastructure Needs
    $75,000, Ghandehari PI, 2017-2018
  - Imaging Degradation of Electric Power Infrastructure
    $100,000, Ghandehari PI, 2014-2015
  - Impact of Alternative Deicing Practices on the Electric Power Infrastructure
    $30,000, Ghandehari PI, with Ilan Juran (NYU Co-PI), 2013-2014
  - Network Transformer Infrastructure Failure Modeling
    $495,000, Ghandehari Co-PI (NYU share $75,000, with Zivan Zabar (NYU PI), 2012-2015

- **American International Group (AIG)**
  - Imaging Traffic Safety Based on Surrogate Measures
    $100,000, Ghandehari Co-PI, with Kaan Ozbay (NYU PI), 2016-2017

- **National Institute of Health**
  - Sensing Technology for Tracking Subsurface Aerobic Remediation
    $100,000, Ghandehari PI, with Mohsen Hossein (Co-PI NYU Tandon) 2014-2016

- **Gas Research Institute**
  - Imaging System for Early Detection of Damage in Natural Gas Pipelines
    $100,000, Ghandehari PI, 2008-2009
  - Optical Metrology for Methane Gas Leaks Detection
    $150,000, Ghandehari PI, 2007-2009

- **US Department of Housing and Urban Development**
  - New York State Resiliency Institute for Storm Events (NYSRISE)
    $3,200,000, Founding Investigators along with Mohamad Karamouz (formerly at NYU), PI role transferred to Bud Griffis, NYU Share $1,600,000, collaboration with Minghua Zhang (Co-PI SUNY Stonybrook), 2013-2016

- **US Department of Transportation**
  - Urban Air Quality Impact of Traffic Congestion
    $100,000 Ghandehari PI, with John Falcocchio (NYU Co-PI), 2012-2013

- **US Department of Energy**
  - Solar Decathlon, Education Innovation on Energy Efficient Building Materials
    $246,000, Ghandehari Co-PI (NYU Share $100,000), collaboration with Steven Van Dessel (PI, Worcester Polytechnic), 2013-2014

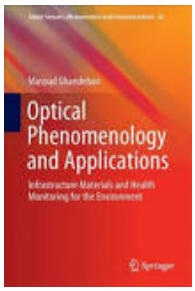
- **Government of Singapore**
  - Imaging System for identification of Waterborne Contaminants
    $641,000 Ghandehari Co-PI (NYU Share $75,000, work carried out at National University of Singapore), collaboration with Karina Jin, PI NUS, 2010-2012

- **New York State**
  - Technology Commercialization Grant
    $100,000, Ghandehari PI, 2015-2016

- **New York University**
  - Innovation Grant, Carbon Sequestering with Infrastructure Materials
    $62,000, Ghandehari PI, with Weihua Jin (NYU Co-PI), 2010-2011

- **Pinkerton Foundation**
  - Applied Science Promoting Innovation in Research & Engineering
    "Mentoring Program in Science, Technology, Engineering" , Participant in team led by Vikram Kapila (PI NYU Tandon)
    $399,762, 2013-2015

4. SCHOLARLY WORK - BOOKS AND PEER REVIWED PUBLICATIONS



Book (In print, see supplemental documents for table of contents)

1. Optical Phenomenology and Applications. *Health Monitoring for Infrastructure Materials and the Environment. Springer International Publishing, 2018. Link ISSN:2194-8410*

Journal Publications:

*Corresponding author underlined, Student coauthors shown with **

1. GHANDEHARI, M., EMIG, T. and AGHAMOHAMADNIA, M*., 2018. Surface temperatures in New York City: Geospatial data enables the accurate prediction of radiative heat transfer. *Scientific Reports (Nature Publisher Group),* **8**, pp. 1-10. DOI

2. YANG, L*., LI, W., GHANDEHARI, M. and FORTINO, G., 2018. People-Centric Cognitive Internet of Things for the Quantitative Analysis of Environmental Exposure. *IEEE Internet of Things Journal,* **5**(4), pp. 2353-2366. DOI

3. GHANDEHARI, M., AGHAMOHAMADNIA, M*., DOBLER, G., KARPF, A., BUCKLAND, K., QIAN, J. and KOONIN, S., 2017. Mapping Refrigerant Gases in the New York City Skyline. *Scientific Reports,* **7**(1), pp. 2735. DOI

4. JOHNSON, N.E*., IANIUK, O., CAZAP, D., LIU, L., STAROBIN, D., DOBLER, G. and GHANDEHARI, M., 2017. Patterns of waste generation: A gradient boosting model for short-term waste prediction in New York City. *Waste Management,* **62**, pp. 3-11. DOI

5. LIU, E*., GHANDEHARI, M., BRUCKNER, C., KHALIL, G., WORLINSKY, J., JIN, W., SIDELEV, A. and HYLAND, M.A., 2017. Mapping high pH levels in hydrated calcium silicates. *Cement and Concrete Research,* **95**, pp. 232-239. DOI

6. SIDELEV, A*. and GHANDEHARI, M., 2017. Quantitative Assessment of Subsurface Oxidation in Coated Materials. *Journal of Performance of Constructed Facilities,* **31**(5). DOI

7. GREGORY, D., MASOUD, G., STEVEN, E.K. and MOHIT, S.S*., 2016. A Hyperspectral Survey of New York City Lighting Technology. *Sensors,* **16**(12), pp. 2047. DOI

8. ZULLI, M., GHANDEHARI, M., SIDELEV, A*. and SHAH, S.P., 2016. Dimensional factors in oxidation induced fracture in reinforced concrete. *Construction and Building Materials,* **122**, pp. 264-272. DOI

9. ROSSO, F*., JIN, W., PISELLO, A.L., FERRERO, M. and GHANDEHARI, M., 2016. Translucent marbles for building envelope applications: Weathering effects on surface lightness and finishing when exposed to simulated acid rain. *Construction and Building Materials,* **108**, pp. 146-153. DOI

10. ROSSO, F*., PISELLO, A., JIN, W., GHANDEHARI, M., COTANA, F. and FERRERO, M., 2016. Cool Marble Building Envelopes: The Effect of Aging on Energy Performance and Aesthetics. *Sustainability,* **8**(8), pp. 753. DOI

11. WILKE, E*., JIN, W., VAN DESSEL, S., BERARDI, U., GHANDEHARI, M., EL-KORCHI, T., NARAIN, J. and SHUKLA, N., 2016. Design and Application of Concrete Tiles Enhanced with Microencapsulated Phase-Change Material. *Journal of Architectural Engineering,* **22**(1), pp. 5015003. DOI

12. ZHENG, S*., GHANDEHARI, M. and OU, J., 2016. Photonic crystal fiber long-period grating absorption gas sensor based on a tunable erbium-doped fiber ring laser. *Sensors & Actuators: B. Chemical,* **223**, pp. 324-332. DOI

13. LEUNG, C.K.Y., WAN, K.T., INAUDI, D., BAO, X., HABEL, W., ZHOU, Z., OU, J., GHANDEHARI, M., WU, H.C. and IMAI, M., 2015. Review: optical fiber sensors for civil engineering applications. *Materials and Structures,* **48**(4), pp. 871-906. DOI

14. WORLINSKY, J.L*., HALEPAS, S*., GHANDEHARI, M., KHALIL, G. and BRÜCKNER, C., 2015. High pH sensing with water-soluble porpholactone derivatives and their incorporation into a Nafion® optode membrane. *The Analyst,* **140**(1), pp. 190-196. DOI

15. ZHENG, S*., SHAN, B., GHANDEHARI, M. and OU, J., 2015. Sensitivity characterization of cladding modes in long-period gratings photonic crystal fiber for structural health monitoring. *Measurement,* **72**, pp. 43-51. DOI

16. DOBLER, G., GHANDEHARI, M., KOONIN, S.E., NAZARI, R., PATRINOS, A., SHARMA*, M.S., TAFVIZI, A., VO, H.T.1. and WURTELE, J.S., 2015. *Dynamics of the urban lightscape.* DOI

17. KLAVARIOTI, M*., KOSTARELOS, K., POURJABBAR, A. and GHANDEHARI, M., 2014. In situ sensing of subsurface contamination—part I: near-infrared spectral characterization of alkanes, aromatics, and chlorinated hydrocarbons. *Environmental Science and Pollution Research,* **21**(9), pp. 5849-5860. DOI

18. WORLINSKY, J.L*., ZARATE, G., ZELLER, M., GHANDEHARI, M., KHALIL, G. and BRÜCKNER, C., 2013. Oxazolochlorins 11: Tuning the dynamic high pH sensing range of meso-tetraarylporpholactonato]M(II) complexes by variation of the central metal ion, the aryl substituents, and introduction of a β-nitro group. *Journal of Porphyrins and Phthalocyanines,* **17**(08), pp. 836-849. DOI

19. GHANDEHARI, M., VIMER, C.S*., IOANNOU, I., SIDELEV, A., JIN, W. and SPELLANE, P., 2012. In-situ measurement of liquid phase moisture in cement mortar. *NDT & E International,* **45**(1), pp. 162-168. DOI

20. KHALIL, G.E., DADDARIO, P*., LAU, K.S.F*., IMTIAZ, S*., KING, M*., GOUTERMAN, M., SIDELEV, A*., PURAN, N*., GHANDEHARI, M. and BRÜCKNER, C., 2010. meso-Tetraarylporpholactones as high pH sensors. *The Analyst,* **135**(8), pp. 2125. DOI

21. GHANDEHARI, M., BEHNOOD, A*. and KHANZADI, M., 2010. Residual Mechanical Properties of High-Strength Concretes after Exposure to Elevated Temperatures. *Journal of Materials in Civil Engineering,* **22**(1), pp. 59-64. DOI

22. VIMER, C*., YU, S*. and GHANDEHARI, M., 2009. Probing pH Levels in Civil Engineering Materials. *Journal of Materials in Civil Engineering,* **21**(2), pp. 51-57. DOI

23. BEHNOOD, A. and GHANDEHARI, M., 2009. Comparison of compressive and splitting tensile strength of high-strength concrete with and without polypropylene fibers heated to high temperatures. *Fire Safety Journal,* **44**(8), pp. 1015-1022. DOI

24. KHALIL, G.E., KIMURA, F., CHIN, A., GHANDEHARI, M., WAN, R., SHINOKI, W., GOUTERMAN, M., CALLIS, J.B. and DALTON, L.R., 2006. Continuous Underground Monitoring of Gas Leaks. *Research in Nondestructive Evaluation,* **16**(3), pp. 119-130. DOI

25. GHANDEHARI, M. and KHALIL, G., 2005. Materials Health Management by In-Situ Chemical Analysis. *ASNT Journal of Materials Evaluation,* **63**(7). DOI

26. GHANDEHARI, M. and VIMER, C.S., 2004. In situ monitoring of pH level with fiber optic evanescent field spectroscopy. *NDT & E International,* **37**(8), pp. 611-616. DOI

27. AKKAYA, Y*., GHANDEHARI M, ACKERMAN B, SHAH S. Influence of Fiber Dispersion on Performance of Microfiber Reinforced Composites. *Fiber Reinforced Concrete: Innovations* ACI Special Publication, Academy of Athens; 2002. DOI

28. GHANDEHARI, M., KRISHNASWAMY, S. and SHAH, S., eds, 2001. *Dimensional Factors of Bond Failure in Reinforced Concrete.* ACI Special Publication SP-201 edn. ACI. DOI

29. GHANDEHARI, M., KRISHNASWAMY, S. and SHAH, S., 2000. Bond-Induced Longitudinal Fracture in Reinforced Concrete. *Journal of Applied Mechanics,* **67**(4), pp. 740. DOI

30. POPOVIC, J., SONG, W., GHANDEHARI, M., SUBRAMANIAM, K., ACHENBACH, J. and SHAH, S., 2000. Application of Surface Wave Transmission Measurements for Crack Depth Determination in Concrete. *American Concrete Institute Materials Journal,* **97**(2), pp. 127-135. DOI

31. ALDEA, C., GHANDEHARI, M., SHAH, S. and KARR, A., 2000. Estimation of Water Flow Through Cracked Concrete Under Load. *American Concrete Institute Materials Journal,* **97**(5), pp. 567-575. DOI

32. PELED, A., ENSSLEN, F*., GHANDEHARI, M*. and SHAH, S., 1999. Pullout Resistance of Anchor Bolts: Effect of Matrix Properties. *Concrete Science and Engineering,* **V1**, pp. 120-128. DOI

33. GHANDEHARI, M*., KRISHNASWAMY, S. and SHAH, S., 1999. Technique for Evaluating Kinematics between Rebar and Concrete. *Journal of Engineering Mechanics,* **125**(2), pp. 234-241. DOI

Peer Reviewed Conference Proceedings

*Corresponding author underlined, Student coauthors shown with **

1. GHANDEHARI M., EMIG T., AGHAMOHAMADNIA M.*, *Urban Radiation Sensing and Modeling, Proceedings Urban Remote Sensing*, IEEE International Geoscience and Remote Sensing Symposium, 2018 (forthcoming)

2. LIN Y*., WENFENG L., YING D., YUN L. and GHANDEHARI, M., *Services D2D aggregation for environment measurement based on people-centric IoT*, IEEE, pp. 319-324, Apr 2017. DOI

3. GHANDEHARI M., AGHAMOHAMADNIA M.*, DOBLER G, KARPF A., CAVALCANTE C.*, BUCKLAND K., QIAN J., KOONIN S., *Ground Based Hyperspectral Imaging of Urban Emissions*, Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing, Aug 2016, Los Angeles, CA. DOI

4. GHANDEHARI M., *Cool Marble Building Envelopes: The Effect of Aging on Energy Performance and Aesthetics***,** National Congress on Sustainable Development, Human Health and Environmental Protection. Assisi Italy, April 2016. DOI

5. ZHANG H., GHANDEHARI M., SIDELEV A.*, BAZHANSKI R., WANG P., XIE J., ZOU J., LUI E.*, LI D., FANG F., CUI H. AND WANG X., "*Monitoring the Hysteresis Effects in*

The Strain-Stress Curve of Carbon Fiber Reinforced Laminates by FBG Technology", International Conference on Fiber Optical Sensors, Proc. SPIE 7753, 775387, May 2011. DOI

6. GHANDEHARI M., *In-situ Chemical Analysis for Life Cycle Health Management,* First International Symposium on Life-Cycle Civil Engineering, Varenna, Italy, June 10-14, 2008. DOI

7. ZHENG S.*, SIDELEV A.*, SPELLANE P. MLEKICKI F.*, GHANDEHARI M., *Moisture Sensing in Porous Media*, World Forum on Smart Materials and Smart Structures Technology, Chongqing and Nanjing, May 22-27 2007. DOI

8. GHANDEHARI M., *Material Monitoring by In-situ Chemical Analysis*, World Forum on Smart Materials and Smart Structures Technology, Chongqing and Nanjing, May 22-27 2007. DOI

9. GHANDEHARI M., *In-situ Chemical Analysis for Materials Health Management*, Plenary session, World Forum on Smart Materials and Smart Structures Technology, Chongqing and Nanjing, May 22-27 2007. DOI

10. PURAN N.*, KHALIL G., GHANDEHARI M., *Simultaneous Detection of pH and Chloride Concentration in Civil Infrastructure*, World Forum on Smart Materials and Smart Structures Technology, Chongqing and Nanjing, May 22-27 2007. DOI

11. GHANDEHARI M, VIMER C*. *In-Situ Monitoring of Moisture in Pavement Materials.* In: Guermes A, editor. Structural Health Monitoring: Proceeding of the Third European Conference. Spain: Transportation Research Board; 2006. DOI

12. GHANDEHARI M., KHALIL G., KIMURA F.*, CHIN A.*, WAN R.*, SHINOKI W.*, GOUTERMAN M., CALLIS J., DALTON L., *Detection of Gas Leaks in the Subsurface Environment*, Non-destructive Detection and Measurement for Homeland Security, SPIE Smart Structures and Nondestructive Evaluation, San Diego, CA, March 2005. DOI

13. GHANDEHARI M., VIMER C*. *Functional Polymers and Optical Spectroscopy for Distributed Measurement in the Subsurface Environment*, SPIE Photonics North, Distributed Sensors and Applications, September 2004, Ottawa, CA. DOI

14. GHANDEHARI M., VIMER C.*, *In-Situ Monitoring of Reaction Chemistries in Concrete*, International Symposium Advances in Concrete through Science and Engineering, March 21-24, 2004, Evanston, Illinois. DOI

15. GHANDEHARI, M., VIMER, C*. *Moisture Sensing in Structural Materials Using Near-Infrared Evanescent Field Spectroscopy.* In: Chang F, editor. Structural health monitoring 2003: from diagnosis & prognostics to structural health management; proceedings of the 4th International Workshop on Structural Health Monitoring. Lancaster, Pa 2003. DOI

16. GHANDEHARI M., VIMER C.*, *Fiber Optic Chemo-sensing for Civil Infrastructure*, Proceedings of the 15th ASCE Engineering Mechanics Conference, June 2-5, 2002, New York, NY. DOI

17. GHANDEHARI M., VIMER C.*, *Fiber Optic Evanescent Field Sensors for pH Monitoring in Civil Infrastructure*, in NDE for Health Monitoring and Diagnostics, Proceedings of SPIE, March 17-21 2002, San Diego, CA. DOI

18. ALDEA C., GHANDEHARI M., SHAH S., KARR A., *Experimental Study Relating Cracking to Water Permeability of Concrete*, Transport Properties and Microstructure of Cement-Based Systems, Proceedings Materials Research Society Symposium, November 1999, Boston MA. DOI

19. GHANDEHARI M., ZULLI M., SHAH S., *Influence of Corrosion on Bond Strength in Reinforced Concrete*, Transport Properties and Microstructure of Cement-Based Systems, Proceedings Materials Research Society Symposium, November 1999, Boston MA. DOI

20. GHANDEHARI M, KRISHNASWAMY S, SHAH S., *Non-Destructive Evaluation of the Interface in Reinforced Concrete Using Phase Measurement Interferometry.* MRS Online Proceedings Library. 503; Jan 1997. DOI

5. PATENTS and PRESS

Disclosures and Patents

- "Methods and technologies to detect hazardous substances in the environment", USPTO **046434-2015.** Inventors: Mlekicki (former undergraduate student), Ghandehari, Sidelev (former doctoral student), Hossein. Khalil

- "Method for Mapping Distribution of High pH" USPTO 28755265, Provisional. Inventors: Ghandehari, Khalil, Liu (former doctoral student)

Press

Wall Street Journal: *As World Crowds In, Cities Become Digital Laboratories,* New York City amasses data on habits, health and security of its citizens to cope with spiraling growth. Link

6. PROFESSIONAL ACTIVITY: INVITED TALKS and CONFERENCE PRESENTATIONS

Invited Talks

1. *"Urban Cyber Assets: challenges and opportunities"*, NSF Workshop on Urban Climate in Extremes, City University of New York, August 2018.

2. *"The Ideal City: The Emerging Coherence of Smart Cities"*, Moderator, New York, April 2018.

3. *"Geospatial Data for Modeling Radiative Heat Transfer in Cities"*, University of Stuttgart, Germany, July 2017.

4. *"Urban Science for Urban Security"*, Centre National de la Recherche Scientifique, (CNRS) Paris, France, October 2017.

5. "*Multiscale Analysis of Urban Emissions",* NSF STC Symposium on Regional Air Quality Monitoring in Safety and Security Applications, New York City, October 2016.

6. *"Persistent and Synoptic Phenomenology for Urban Systems":* MIT Urban Physics Colloquium, Massachusetts Institute of Technology, Cambridge MA, March 2016.

7. *"Data Hubs for Smart Cities"*, Smart Cities Digital Leadership Summit, Singapore, December 2015.

8. *"Sensing and Data for Cities",* Emerging Technology in Infrastructure Management and Monitoring, American Association of Civil Engineers, New York Metropolitan Symposium, 2015.

9. *"Hyperspectral Imaging for Urban Security",* Department of Homeland Security Center for Maritime Security, 2015.

10. *"Synoptic and Persistent Observation for Cities",* Sandia National Laboratory, Department of Energy, Albuquerque NM, 2014

11. *"Synoptic and Persistent Observation for Cities",* Los Alamos National Laboratory, Department of Energy, Albuquerque NM, 2014.

12. *"Performance Based Infrastructure Asset Management",* Co-organizer, National Science Foundation International Workshop, July 2008, Istanbul.

13. *"Optical Spectroscopy & Remote Monitoring - Infrastructure, Energy & Environment"*, NACE International Corrosion Symposium – Monitoring Corrosion for Asset Management, 2004.

14. *"Chemical Sensing for Civil Infrastructure"* Technical University of Braunschweig Germany, July 2003.

<u>Conferences Presentations (no proceedings)</u>

1. EMIG T., GHANDEHARI M., AGHAMOHAMADNIA M.*, *Radiative Heat Transfer and Surface temperatures in New York City*. American Meteoritical Society (AMS), 10th International Conference on Urban Climate, New York, August 2018.

2. GHANDEHARI M. CAPLIN A. THORSTEN G. *Health, Wealth and Urban Pollution,* American Meteoritical Society (AMS), 10th International Conference on Urban Climate, New York, August 2018.

3. GROSSBERG M., GHANDEHARI M., VIDAL G.*, Crowdsourcing Urban Functionalities, American Meteoritical Society (AMS), 10th International Conference on Urban Climate, New York, August 2018.

4. GHANDEHARI M., *Oblique View Imaging of Urban Emissions:* SPIE Defense and Security, Algorithms and Technologies for Multispectral, Hyperspectral, and Ultraspectral Imagery, Baltimore MD, April 2016.
5. KLAVARIOTI M*., KOSTARELOS K., GHANDEHARI M., *A Chemical Sensor Utilizing Near Infrared Spectroscopy: Developing a Spectra Database*, Third International Conference on Industrial and Hazardous Waste Management, Crete/Chania 2012.
6. FANG H. M., GIN K. Y. H., VISWANATH B., GHANDEHARI M., PETRE M*., *Rapid Identification of Water-borne Microorganisms by Fluorescence Spectroscopy*, Water Solutions for Livable and Sustainable Cities, July 2012.
7. HAILEMARIAM M*., LIU E*., GHANDEHARI M., SIDELEV A*., JIN W., LEVICKY R., ZIEGLER E., *Biomineralization of Industrial Waste for Carbon Sequestration* New York Academy of Science, March 2012.
8. GHANDEHARI M, MEZZI M, TOMASSOLI E, *Edifici Monopiano a Basso Costo per la Ricostruzione dopo il Terremoto di Haiti del 2010*, XIV Convegno ANIDIS, BARI Italy, September 2011.
9. SIDELEV A*., GHANDEHARI M, *Thermal Imaging for Quantitative Assessment of Subsurface Corrosion for the Natural Gas Utilities*, EMI 2011 conference, June 2011, Boston, MA.
10. SIDELEV A*., LIU E*., KHALIL G., BRUCKNER C., GHANDEHARI M., *Sensing High pH and Ionic Transport in Cementitious Materials*, Oral presentation, EMI 2011 conference, June 2011, Boston, MA.
11. SIDELEV A*., KHALIL G., GHANDEHARI M., *Detection of Gas Leaks in the Subsurface Environment*, EMI 2011 conference, June 2011, Boston, MA.
12. SIDELEV A*., LIU E*., JIN W., KHALIL G., BRUCKNER C., GHANDEHARI M., *Temperature and Cure Monitoring in Curing Concrete*, Oral presentation, EMI 2011 conference, June 2011, Boston, MA.
13. GHANDEHARI M., *In-Situ Materials Analysis with Optical Electrodes*, The Fourth Int. Conf. on Advanced Smart Material and Smart Structures Technology, Asian-Pacific Network of Centers for Research in Smart Structure Technology, Tokyo, June 2008.
14. MLEKICKI F*., GHANDEHARI M., *Distributed Monitoring of Moisture Ingress for Cable Structures*, The Fourth Int. Conf. on Advanced Smart Material and Smart Structures Technology, Asian-Pacific Network of Centers for Research in Smart Structure Technology, Tokyo, June 2008.
15. GHANDEHARI M., VIMER C*., *In-Situ Monitoring of Moisture in Pavement Materials*, TRB Annual Meeting Session 453 - Pavement Monitoring, 2005.
16. GHANDEHARI M., VIMER C*., *Molecular Vibration Spectroscopy for Materials Health Management*, NSF Workshop on Advanced Smart Materials and Smart Structures Technology, Hawaii, January 2004.
17. GHANDEHARI M., VIMER C*., *Optical Spectroscopy for Detection of Moisture Ingress in Civil Infrastructure*, Proceedings, Structural Materials Technology (SMT): NDE/NDT for Highways and Bridges September 14-17, 2004.

18. GHANDEHARI M., VIMER C*., *Fiber Optic pH Sensor with Cellulose Cladding for Structural Health Monitoring*, Smart Systems and NDE for Civil Infrastructures, SPIE, Smart Structures/NDE San Diego, CA, 2003.
19. VIMER C*., GHANDEHARI M., *Moisture Sensing in Structural Materials Using Near-Infrared Evanescent Field Spectroscopy*, Proc.16th ASCE Engineering Mechanics Conference, July 2003, Seattle, WA.
20. GHANDEHARI M., VIMER C*., *PH Monitoring in Civil Infrastructure*, Proceedings First International Workshop on Structural Health Monitoring of Innovative Civil Engineering Structures, September 19-22, 2002, Winnipeg, Canada.

7. EDUCATIONAL INNOVATION

- Sustainable Cities – the Food, Energy, Water Nexus: Led a group of 20 students from NYU, CUNY and University of Stuttgart Germany collaborate on a one-week, data driven hackathon focusing on the FEW nexus in the NYC Borough Hall neighborhood.
- Crosscutting Education: Obtained approval and served as academic advisor for NYU wide minor on Urban Informatics, including a newly design core course titled "Sensing the City".
- Teaching Sustainability - Solar Decathlon: Led a group of 15 NYU and WPI students compete in the DOE funded energy efficient housing. The full scale 100% solar pwered house incorporating energy harvesting cement based materials was sold at the competition for $300k.
- From Innovation to Entrepreneurship (I2E) – Optical sensing for environmental monitoring, Led an NYU Engineering undergraduate student to launch a technology startup which was subsequently funded by the National Institute of Health (NIH) and led to a patented technology.
- Social Entrepreneurship and Technology Transfer - Post disaster relief work following 2010 Earthquake in Haiti: Led NYU Engineering students participate in the 2012 Haiti earthquake relief work. Funded by Clinton foundation students worked in the lab and traveled to Port-au-Prince for safe housing technology competition. Students built a model building for the Build Back Better initiative that is now serving as a public library. A materials manufacturing facility is currently in operation in Haiti using the developed lightweight/cellular concrete formula.
- International Research for Undergraduate Education in lifecycle engineering – Led a group of NYU Engineering students to spend two summer months at the University of Braunschweig Germany, working on this NSF funded collaboration.
- Undergraduate and K-12 Research and Mentorship in Sustainability – Led a year-long programs for number of high school students on the theme of sensing and material science; many of the participants are now pursuing doctoral studies or faculty members at other universities.