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Education

Calcutta University, Calcutta, India	Chemistry	BSc (Hons) 1999
Indian Institute of Technology, Kanpur, India	Chemistry	MSc 2001
University of Pennsylvania	Chemistry	Ph.D. 2009

Appointments

2015-Present	Assistant Professor of Chemistry, Southern Illinois University, Carbondale, IL
2012-2015	Postdoctoral Fellow, Chemistry, Northwestern University, Evanston, IL
2010-2012	Postdoctoral Fellow, Chemistry, Duke University, Durham, NC
2001-2002	Junior Research Fellow (JRF), Indian Institute of Technology, Kanpur, India

Honors, Awards, and Grant

2016	<i>Ralph E. Powe Junior Faculty Enhancement Award</i> - ORAU, 2016
2016	<i>Energy Boost Seed Grant</i> , Advanced Coal and Research Center, SIU Carbondale
2005-2009	<i>Graduate Research Fellowship</i> , University of Pennsylvania
2001-2002	<i>Junior Research Fellowship</i> , Council for Scientific and Industrial Research (CSIR) India
2001	<i>Graduate Aptitude Test in Engineering (GATE)</i> ; All India Rank: 15 th (of 3000)
2001	<i>Summer Research Fellowship</i> , Jawaharlal Nehru Center for Advanced Scientific Research
2000	<i>Rajiv Gandhi Science Talent Award</i> , Jawaharlal Nehru Center for Advanced Scientific Research
2000-2001	<i>Merit Cum Means Scholarship</i> , IIT- Kanpur, India
2000	<i>Summer Research Fellowship</i> , Jawaharlal Nehru Center for Advanced

Research Interest & Expertise

- Self-assembled compositions for photo-, electro-chemical processes
- Nanoscale materials for optoelectronic applications.
- Porous materials for heterogeneous catalysis
- Functional hybrid porous materials for gas capture and electrocatalysis
- Environmentally conscious design and study of robust functional materials

Teaching & Mentoring

- Developed and taught graduate level course *Bio-inspired Materials* (CHEM-579) –Fall 2015.
- Freshman honors General Chemistry/Inorganic chemistry (CHEM 210H)-Spring 2016.
- *Advisor* of graduate students, Southern Illinois University, Fall 2015-present. Supervising 3 graduate students.
- *Mentor* –NSF Chemistry REU program, Southern Illinois University, Summer 2016.
- *Mentor* –NSF Chemistry REU program, University of Pennsylvania, Summer 2004, 2005.
- *Teaching Assistant*, General Chemistry and Advanced Organic Chemistry Lab, University of Pennsylvania, 2002-2005.

Publications: (google scholar citation 1146, h-index 20; * contribution as corresponding author from independent career)

1. **Deria, P.;*** Gómez-Gualdrón, D. A.; Hod, I.; Snurr, R. Q.; Hupp, J. T.; Farha, O. K. Topologically Dependent Catalytic Activity of Zirconium-Based Porphinatozinc(II) MOFs. *J. Am. Chem. Soc.* **2016**, *138*, 14449–14457.
2. **Deria, P.;*** Yu, J.; Balaraman, R. P.; Mashni, J.; White, S. N. Topology-Dependent Emissive Properties of Zirconium-Based Porphyrin MOFs. *Chem. Commun.* **2016**, *52*, 13031-13034.
3. Depotter, G.; Olivier, J.-H.; Glesner, M. G.; **Deria, P.;** Bai, Y.; Bullard, G.; Kumbhar, A. S.; Therien, M. J.; Clays, K. First-Order Hyperpolarizabilities of Chiral, Polymer-Wrapped Single-Walled Carbon Nanotubes. *Chem. Comm.* **2016**, *52*, 12206-12209.
4. Chung, Y. G.; Gómez-Gualdrón, D. A.; Li, P.; Vermeulen, N.; Leperi, K.; **Deria, P.;** Zhang, H.; Fenqi You, F.; Stoddart, J. F.; Hupp, J. T.; Farha, O. K.; Snurr, R. Q. *In silico* discovery of metal-organic frameworks for pre-combustion CO₂ capture using a genetic algorithm. *Science Adv.* **2016**, *2*, e1600909.
5. Hoffeditz, W. L.; Katz, M. J.; **Deria, P.;** George, E. Cutsail III; Pellin, M. J.; Farha, O. K.; Hupp, J. T. One Electron Changes Everything. A Multispecies Copper Redox Shuttle for Dye-Sensitized Solar Cells. *J. Phys Chem. C.* **2016**, *120*, 3731-3740.
6. **Deria, P.;**† Gómez-Gualdrón, † D. A.; Bury, W.; Schaef, H. T.; Wang, T. C.; Thallapally, P. K.; Snurr R. Q.; Hupp, J. T.; Farha, O. K. Ultraporous, Water Stable, and Breathing Zirconium-based Metal-Organic Frameworks with *ftw* Topology. *J. Am. Chem. Soc.* **2015**, *137*, 13183-13190. († equal contribution)
7. Hod, I.; Sampson, M. D.; **Deria, P.;** Kubiak, C. P.; Farha, O. K.; Hupp, J. T. Fe-Porphyrin Based MOF Films as High-Areal-Concentration, Heterogeneous Catalysts for Electrochemical Reduction of CO₂. *ACS Catalysis.* **2015**, *5*, 6302-6309.
8. Lalonde, M. A.; Mondloch, J. E.; **Deria, P.;** Sarjeant, A. A.; Al-Juaid, S. S.; Abdelkarim, O. I.; Farha, O. K.; Hupp, J. T. Selective Solvent-Assisted Linker Exchange (SALE) In a Series of Zeolitic Imidazolate Frameworks. *Inorg. Chem.* **2015**, *54*, 7142-7144.
9. McGonigal, P. R.; **Deria, P.;** Hod, I.; Moghadam, P.; Avestro, A.-J.; Horwitz, N.; Gibbs-Hall, I. C.; Blackburn, A. K.; Chen, D.; Botros, Y. Y.; Wasielewski, M. R.; Snurr, R. Q.; Hupp, J. T.; Farha, O. K.; Stoddart, J. F. Electrochemically-Addressable Trisradical Rotaxanes Organized within a Metal-Organic Framework. *Proc. Natl. Acad. Sci. USA*, **2015**, *112*, 11161-11168.
10. Hod, I.; **Deria, P.;** Bury, W.; Mondloch, J. E.; Kung, C.-W.; So, M.; Farha, O. K.; Hupp, J. T. A Porous, Proton Relaying, Metal-Organic Framework Material that Accelerates Electrochemical Hydrogen Evolution. *Nat. Commun.* **2015**, *6*, 8304 (DOI: 10.1038/ncomms9304).
11. **Deria, P.;** Gregory, Y.; Snurr, R. Q.; Farha, O. K.; Hupp, J. T. Water Stabilization of Zr₆-Based MOFs via Solvent-Assisted Ligand Incorporation. *Chem. Sci.* **2015**, *6*, 5172-5176.
12. **Deria, P.;**† Li, S.;† Snurr, R. Q.; Farha, O. K.; Hupp, J. T. A MOF Platform for Incorporation of Complementary Organic Motifs for CO₂ Binding. *Chem. Commun.* **2015**, *51*, 12478-12481. († equal contribution)
13. Li, P.; Klet, R. C.; Moon, S.-Y. Wang, T. C.; **Deria, P.;** Peters, A. W.; Klahr, B. M.; Park, H.-J.; Al-Juaid, S. S.; Hupp, J. T.; Farha, O. K. Synthesis of Nanocrystals of Zr-Based Metal–Organic Frameworks with csq-Net: Significant Enhancement in the Degradation of a Nerve Agent Simulant. *Chem. Commun.* **2015**, *51*, 10925-10928.
14. Hongda Zhang, H.; **Deria, P.;** Farha, O. K.; Hupp, J. T.; Snurr, R. Q. A Thermodynamic Tank Model for Studying the Effect of Higher Hydrocarbons on Natural Gas Storage in Metal-Organic Frameworks. *Energy Environ. Sci.* **2015**, *8*, 1501-1510.
15. Olivier, J.-H.; Park, J.; **Deria, P.;** Rawson, J.; Bai, Y.; Therien, M. J. Unambiguous Diagnosis of Photoinduced Charged Carrier Signatures in a Stoichiometrically Controlled Semiconducting Polymer-Wrapped Carbon Nanotube Assembly. *Angew. Chem. Int. Ed.* **2015**, *127*, 8251-8256.

16. Wang, T. C.; Bury, W.; Gomez-Gualdrón, D. A.; Vermeulen, N. A.; Mondloch, J. E.; **Deria, P.**; Zhang, K.; Moghadam, P.; Sarjeant, A. A. Snurr, R. Q.; Stoddart, J. F.; Hupp, J. T.; Farha, O. K. Ultrahigh Surface Area Zirconium MOFs, and Insight into the Applicability of BET Theory. *J. Am. Chem. Soc.* **2015**, *137*, 3585-3591.
17. **Deria, P.**; Bury, W.; Hod, I.; Kung, C.-W.; Karagiari, O.; Hupp, J. T.; Farha, O. K. MOF Functionalization via Solvent-Assisted Ligand Incorporation: Phosphonates vs. Carboxylates. *Inorg. Chem.* **2015**, *54*, 2185-2192.
18. Hod, I.; Bury, W.; Gardner, D. M.; **Deria, P.**; Roznyatovskiy, V.; Wasielewski, M. R.; Farha, O. K.; Hupp, J. T. Bias-Switchable Permselectivity and Redox Catalytic Activity of a Ferrocene-Functionalized, Thin-Film Metal–Organic Framework Compound. *J. Phys. Chem. Lett.* **2015**, *6*, 586-591. (*Selected as ACS Editor's Choice.*)
19. **Deria, P.**; Olivier, J.-H.; Park, J.; Therien, M. J. Potentiometric, Electronic, and Transient-Absorptive Spectroscopic Properties of Oxidized Single-Walled Carbon Nanotubes Helically Wrapped by Ionic, Semiconducting Polymers in Aqueous and Organic Media. *J. Am. Chem. Soc.* **2014**, *136*, 14193-14199.
20. Hod, I.; Bury, W.; Karlin, D. M.; **Deria, P.**; Kung, C.-W.; Katz, M. J.; So, M.; Klahr, B.; Odom, T. W.; Farha, O. K.; Hupp, J. T. Directed Growth of Electroactive Metal Organic Framework Thin Films Using Electrophoretic Deposition. *Adv. Mater.* **2014**, *26*, 6295-6300.
21. Hoffeditz, W. L.; Katz, M. J.; **Deria, P.**; Martinson, A. B. F.; Pellin, M. J.; Farha, O. K.; Hupp, J. T. High Surface Area Architectures for Improved Charge Transfer Kinetics at the Dark Electrode in Dye-Sensitized Solar Cells. *ACS Appl. Mater. Interfaces.* **2014**, *6*, 8646-8650.
22. **Deria, P.**; Mondloch, J. E.; Karagiari, O.; Bury, W.; Hupp, J. T.; Farha, O. K. Beyond Post-Synthesis Modification: Evolution of Metal–Organic Frameworks via Building Block Replacement. *Chem. Soc. Rev.* **2014**, *43*, 5896-5912.
23. **Deria, P.**;† Bury, W.;† Hupp, J. T.; Farha, O. K. Diverse Functionalization of NU-1000 via Solvent-Assisted Ligand Incorporation. *Chem. Commun.* **2014**, *50*, 1965-1968. († equal contribution)
24. Park, J.; **Deria, P.**; Olivier, J.-H.; Therien, M. J. Fluence-Dependent Singlet Exciton Dynamics in Length-Sorted Chirality-Enriched Single-Walled Carbon Nanotubes. *Nano Lett.* **2014**, *14*, 504-511.
25. **Deria, P.**; Mondloch, J. E.; Tylanakis, E.; Ghosh, P.; Bury, W.; Snurr, R. Q.; Hupp, J. T.; Farha, O. K. Perfluoroalkane Functionalization of NU-1000 via Solvent-Assisted Ligand Incorporation: Synthesis and CO₂ Adsorption Studies. *J. Am. Chem. Soc.* **2013**, *135*, 16801.
26. Olivier, J.-H.; **Deria, P.**; Park, J.; Kumbhar, A.; Andrian-Albescu, M.; Therien, M. J. Ionic Self-Assembly Provides Dense Arrays of Individualized, Aligned Single-Walled Carbon Nanotubes. *Angew. Chem. Int. Ed.* **2013**, *52*, 13080-13085.
27. **Deria, P.**; Von Barga, C.; Olivier, J.-H.; Kumbhar, A.; Saven, J. G.; Therien, M. J. Single-Handed Helical Wrapping of Single-Walled Carbon Nanotubes by Chiral, Ionic, Semiconducting Polymers. *J. Am. Chem. Soc.* **2013**, *135*, 16220.
28. Von Barga, C. D.; MacDermaid, C. M.; Lee, O.-S.; **Deria, P.**; Therien, M. J.; Saven, J. G. Origins of the Helical Wrapping of Phenyleneethynylene Polymers about Single-Walled Carbon Nanotubes. *J. Phys. Chem. B* **2013**, *117*, 12953-12965.
29. Bonhommeau, S.; Deria, P.; Glesner, M. G.; Talaga, D.; Najjar, S.; Belin, C.; Auneau, L.; Trainini, S.; Therien, M. J.; Rodriguez, V. Raman Spectroscopic Investigation of Individual Single-Walled Carbon Nanotubes Helically Wrapped by Ionic, Semiconducting Polymers. *J. Phys. Chem. C* **2013**, *117*, 14840-14849.
30. Larsen, B. A.; **Deria, P.**; Holt, J. M.; Stanton, I. N.; Heben, M. J.; Therien, M. J.; Blackburn, J. L. Effect of Solvent Polarity and Electrophilicity on Quantum Yields and Solvatochromic Shifts of Single-Walled Carbon Nanotube Photoluminescence. *J. Am. Chem. Soc.* **2012**, *134*, 12485.
31. Rosario-Canales, M. R.; **Deria, P.**; Therien, M. J.; Santiago-Avilés, J. J. Composite Electronic Materials Based on Poly(3,4-propylenedioxythiophene) and Highly Charged Poly(aryleneethynylene)-Wrapped Carbon Nanotubes for Supercapacitors. *ACS Appl. Mater. Interfaces* **2012**, *4*, 102-109.
32. Park, J.; **Deria, P.**; Therien, M. J. Dynamics and Transient Absorption Spectral Signatures of the Single-Walled Carbon Nanotube Electronically Excited Triplet State. *J. Am. Chem. Soc.* **2011**, *133*, 17156.

33. **Deria, P.**; Sinks, L. E.; Park, T.-H.; Tomezsko, D.; Burkman, M. J.; Bonnel, D. A.; Therien, M. J. Phase Transfer Catalysts Drive Diverse Organic Solvent Solubility of Single-Walled Carbon Nanotubes Helically Wrapped by Ionic, Semiconducting Polymer. *Nano Lett.* **2010**, *10*, 4192.
34. Rosario-Canales, M. R.; **Deria, P.**; Kang, Y.; Therien, M.; Santiago-Avilés, J. J. Composite Electronic Materials for Supercapacitor Applications. *ECS Trans.* **2009**; *23*, 3-10.
35. Kang, Y. K.; Lee, O.-S.; **Deria, P.**; Kim, S. H.; Park, T.-H.; Bonnell, D. A.; Saven, J. G.; Therien, M. J. Helical Wrapping of Single-Walled Carbon Nanotubes by Water Soluble, Poly(*p*-phenyleneethynylene). *Nano Lett.* **2009**, *9*, 1414.
36. Rosario-Canales, M. R.; **Deria, P.**; Kang, Y.; Therien, M.; Santiago-Avilés, J. J. Evaluation of Composite Electronic Materials Based on Single-Wall Carbon Nanotubes and Highly Charged Poly(aryleneethynylene) for Supercapacitor Applications. *ECS Trans.* **2008**; *16*, 93-101.
37. Kang, Y. K.; **Deria, P.**; Carroll, P. J.; Therien, M. J. Synthesis of Water-Soluble Poly(*p*-phenyleneethynylene) in Neat Water under Aerobic Conditions via Suzuki-Miyaura Polycondensation Using a Diborylethyne Synthon. *Org. Lett.* **2008**, *10*, 1341-1344.
38. Rubtsov, I. V.; Russo, R. M.; Albers, T.; **Deria, P.**; Luzzi, D. E.; Therien, M. J. Visible and Near-Infrared Excited-State Dynamics of Single-Walled Carbon Nanotubes. *Appl. Phys. A: Mater. Sci. Process.* **2004**, *79*, 1747-1751.
39. Chandrasekhar, V.; **Deria, P.**; Krishnan, V.; Athimoolam, A.; Singh, S.; Madhavaiah, C.; Srivatsan, S.; Verma, S. Metalated Hybrid Polymers a Catalytic Reagents for Phosphate Ester Hydrolysis and Plasmid Modification. *Bioorg. Med. Chem. Lett.* **2004**, *14*, 1559.

Works Presented in Conferences:

1. **Deria, P.**; Jamil, M.; Yu, J. Porphyrin-based Metal-Organic Frameworks (MOFs): New Materials for Electro-optics and Energy Conversion. The 9th *International Conference of Porphyrins and Phthalocyanines*, Society of Porphyrins and Phthalocyanines, **2016**, Jiangsu University, Jiangsu, China.
2. **Deria, P.**; Olivier, J.-H.; Christopher, V. B.; Park, J.; Kumbhar, A. S.; Andrian-Albescu, M.; Saven, J. G.; Therien, M. J. Single-handed helical wrapping of single-walled carbon nanotubes by chiral, ionic, semiconducting polymers: New opportunities for the design of electro-optically functional nanoscopic materials. In *Abstracts of Papers of the American Chemical Society*; Amer Chem Soc 1155 16TH ST, NW, Washington, DC 20036 USA: **2014**; Vol. 247.
3. **Deria, P.**; Mondloch, J. E.; Tylanakis, E.; Ghosh, P.; Bury, W.; Snurr, R. Q.; Hupp, J. T.; Farha, O. K. Functionalization of porous coordination polymers via Solvent-Assisted Ligand Incorporation for CO₂ Capture. *Global Climate & Energy Project's 9th Annual Research Symposium*, **2013**, Stanford University, CA, USA.
4. **Deria, P.**; Glesner, M. G.; Kang, Y. K.; Lee, O.-S.; Sinks, L.; Kim, S. H.; Park, T.-H.; Bonnell, D. A.; Saven, J. G.; Therien, M. J. Single-chain, helical wrapping of individualized, single-walled carbon nanotubes by ionic poly (aryleneethynylene) s: New compositions for photoinduced charge transfer reactions and photovoltaic applications. In *Abstracts of Papers of the American Chemical Society*; Amer Chem Soc 1155 16TH ST, NW, Washington, DC 20036 USA: **2011**; Vol. 241.
5. **Deria, P.**; Kang, Y. K.; Lee, O.-S.; Sinks, L. E.; Kim, S. H.; Park, T.-H.; Bonnell, D. A.; Saven, J. G.; Therien, M. J. Single-chain, helical wrapping of individualized, single-walled carbon nanotubes by semiconducting polymers in both aqueous and nonaqueous solvents. In *Abstracts of Papers of the American Chemical Society*; Amer Chem Soc 1155 16TH ST, NW, Washington, DC 20036 USA: **2009**; Vol. 238.
4. Larsen, B. A.; **Deria, P.**; Heben, M. J. Therien, M. J.; Blackburn, J. Emission energy and quantum yield of photo-excited single-walled carbon nanotubes: the influence of solvent and surface bound molecules. In *Abstracts of Papers of The Electrochemical Society, 217th ECS Meeting*, **2010**, 1511
5. **Deria, P.**; Kang, Y.-K. Lee, O.-S.; Kim, S.-H.; Park, T.-H.; Bonnell, D. A.; Saven, J. G.; Therien, M. J. Single-chain, helical wrapping of individualized, single-walled carbon nanotubes by ionic poly (aryleneethynylene) s provide diverse organic solvent solubility. *Thirty-First DOE Solar Photochemistry Research Meeting*, **2009**, USA.

- Rosario-Canales, M. R.; **Deria, P.**; Gopu, P.; Therien, M.; Santiago-Aviles, J. Electrochemical capacitance and electrical transport properties of poly (aryleneethynylene)-wrapped single-walled carbon nanotubes. In *Abstracts of Papers of The Electrochemical Society, 216th ECS Meeting*, **2009**, 2814.
- Russo, R.; **Deria, P.**; Rubtsov, I.; Therien, M.; Luzzi, D. Production and characterization of suspensions of single-wall carbon nanotubes. In *Abstracts of Papers of the American Chemical Society*; Amer Chem Soc 1155 16TH ST, NW, Washington, DC 20036 USA: **2004**; Vol. 227.

Invited Seminar:

- College of Environmental and Energy Engineering, Beijing University of Technology, Beijing, China, **07-2016**.
Title: Topology-Dependent Functionality and Optoelectronic Property in Nanoscale Self-Assembled Structures.
Host: Dr. Jian-Rong Li, Associate Dean.
- Department of Chemistry, Indian Institute of Science Education and Research, Bhopal, India, **06-2014**.
Title: Supramolecular Assembly and Surface Modification towards Functional Nano-scale Materials.
Host: Dr. Manmohan Kapur, Coordinator.
- School of Chemical Sciences, National Institute of Science Education and Research, Bhubaneswar, India, **03-2014**.
Title: Functional Nano-scale Materials Based on Carbon Nanotubes and Coordination Polymers.
Host: Dr. Moloy Sarkar, Chairperson.
- Chemical Sciences and Technology, CSIR-National Institute for Interdisciplinary Science and Technology, Thiruvananthapuram, India, **03-2014**.
Title: Surface Engineering: Evolution of Functional Materials Based on Nano-scale Tubular and Porous Structures.
Host: Dr. Suresh Das, Director.

Patents:

- Deria, P.**; Olivier, J.-H.; Therien, M. J. Single-Handed Helical wrapped Single-Walled Carbon Nanotubes (SWNTs) and Methods of Using the Same. *U.S. Pat. Appl. 61/875,822*, **2013**.
- Deria, P.**; Farha, O. K.; Hupp, J. T. Metal-Organic Framework Compounds with Ligand-Functionalized Metal Nodes. *U.S. Pat. Application. 20150217268*, **2015**.
- Kang, Y. K.; **Deria, P.**; Therien, M. J., Synthesis of Poly-(*p*-aryleneethynylene)s in Neat Water Under Aerobic Conditions. *U. S. Pat. No. US8288497B2*, **2012**. (Though this patent mainly covers the process, the reagent is now sold by Sigma-Aldrich; Product number- **753459**)

Synergistic activity

Invited reviewer for peer-reviewed journal *Journal of the American Chemical Society; Chemical Communication; Inorganic Chemistry; Chemistry-A European Journal; ChemCatChem; ACS Applied Materials & Interface; RSC Advances; Journal of Materials Chemistry A; Journal of Materials Chemistry C; Nanoscale; Nanomaterials; CrystEngComm; Polymer Chemistry; New Journal of Chemistry; Synthetic Metals; Journal of Inorganic and Organometallic Polymers and Materials; Phosphorus, Sulfur, and Silicon and Related Elements; J. Coordination Chemistry; and Comments on Inorganic Chemistry.*

Member American Chemical Society, Society of Porphyrins and Phthalocyanines.

Service Committee Member of three PhD dissertations; Graduate Advisement Committee; Inorganic chemistry Team