

## DIEGO M. ALZATE-SANCHEZ

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Northeastern University, 360 Huntington Ave,  
Boston, MA | (607) 319-9994 | [d.alzatesanchez@northeastern.edu](mailto:d.alzatesanchez@northeastern.edu) |  
<https://polymer.sites.northeastern.edu/>

## EDUCATION

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2016-2019 Ph.D. in chemistry, Evanston, IL, USA, Northwestern *University*  
*Advisor: Prof. William Dichtel.* Graduated.

2014-2016 Ph.D. in fiber science, Ithaca, NY, USA, Cornell *University*  
*Advisor: Prof. Juan Hinestroza.* Transferred to Northwestern *University*

2011-2012 Master in science, Bogotá, Colombia, *Universidad Nacional de Colombia*  
*Advisor: Prof. Cesar A. Sierra.* Graduated.

2005-2010 Bachelor's in chemistry, Bogotá, Colombia, *Universidad Nacional de Colombia*  
*Advisor: Prof. Cesar A. Sierra.* Graduated.

2018-2019 Teaching certificate program, Evanston, IL, USA, Northwestern *University*  
*Searle Center for Advancing Learning and Teaching*

## RESEARCH EXPERIENCE

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Sep 2022-Present DMAS research group, Northeastern University  
· Development of novel polymeric materials with a sustainability focus.

Aug 2019-Aug 2022 Moore research group, University of Illinois at Urbana-Champaign  
· Mechanical activation of ring opening metathesis polymerizations.  
· Mechanistic study of the frontal polymerization of dicyclopentadiene.  
· Design of novel polymeric architectures using frontal polymerization

Aug 2016-Aug 2019 Dichtel research group, Northwestern *University*  
· Grafting of cyclodextrin polymers on supports.  
· Water remediation.  
· Gas pollutants capture.

Aug 2014-Jul 2016 Textile nanotechnology laboratory, Cornell *University*  
· Modification of cotton fabrics with  $\beta$ -cyclodextrin.  
· Synthesis of light responsive azo benzene polymers.

Apr 2013-Jul 2014 Observatorio Vulcanológico, Servicio Geológico Colombiano  
· Study of the ionic composition of Nevado del Ruiz volcano hot springs.

- Investigation of the hydrothermal system of the Cerro Machín volcano.
- Mar 2012-May 2012 König research group, *Universität Regensburg*
  - Use of phenylene vinylene systems in photocatalytic reactions.
- Jan 2009-Dec 2012 Macromolecules research group, *Universidad Nacional de Colombia*
  - Developing of paint and vinyl coated fabrics for the Colombian industry.
  - Synthesis and characterization of phenylene vinylene systems.
- Feb 2010-Apr 2010 Agricultural engineer department, *Universidad Nacional de Colombia*
  - Design of packaging for agricultural and agribusiness companies in Colombia.

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## TEACHING EXPERIENCE

- Jan 2020-May 2020 Invited instructor, *University of Illinois at Urbana-Champaign*: Co-teach the fundamental organic chemistry II class, together with the principal instructor. Teaching half of the lectures, review exams, problem sets, hold office hours and coordinate the teaching assistants work.
- Aug 2017-Dec 2017 Teaching assistant, *Northwestern University*: Support the activities of the 101-organic chemistry class. Holding of problem-solving sessions and office hours, support and grading of undergraduate students.
- Feb 2011-Dec 2012 Teaching assistant, *Universidad Nacional de Colombia*: Support the activities of the organic chemistry laboratory. Teaching of basic purification methods in organic chemistry, advice in the synthesis of organic molecules. Evaluation of undergraduate students.
- Jun 2010-Dec 2010, Jan 2013-Apr 2013 Chemistry instructor, *Politécnico Los Alpes*: Teaching chemistry to senior high school students, inorganic, organic, and analytical chemistry. Advice in the construction of the chemistry program, formulation of questions for the exams, and evaluation of the student's progress.

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## WORK EXPERIENCE

- Sep 2022-Present Science Fellow, Northeastern University
  - Research in polymer chemistry and materials science
  - Mentoring graduate and undergraduate students

- Grants writing

Aug 2019-Aug 2022 Postdoctoral associate, University of Illinois at Urbana-Champaign

- Research in polymer chemistry and materials science
- Mentoring undergraduate students
- Safety officer of the Moore group
- Grants writing

Apr 2013-Aug 2014 Field scientist, *Servicio Geológico Colombiano*

- Monitoring of ten volcanoes activity in the Colombian cordillera central.
- Sampling and quantification of ions in hot springs, and gases in fumes.

Jan 2012-Jul 2014 Content developer, *Instituto Colombiano para la Evaluación de la Educación*

- Elaboration of questions for the annual Colombian national examination of the undergraduate academic programs

## HONORS AND AWARDS

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Best Poster award	International school of materials for sustainable development and energy, 2022
C.S. Marvel award	University of Illinois organic chemistry postdoctoral travel award, 2021.
Dow award	Runner up in the Dow sustainability innovation student challenge, 2017.
Colciencias scholarship	Abroad doctorate students support by the science ministry of Colombia, January 2015-December 2018.
OAS fellowship	Program of post-grade academic studies of the Organization of the American States, January 2015-December 2016.
Unal Fellowship	Outstanding Graduate School Students of the Universidad Nacional de Colombia, February 2011-December 2012
ICFES award	Bachelor chemistry students who got the highest scores in the annual national evaluation of the chemistry academic programs, 2009.

## SERVICE

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UIUC postdoc association	Participation in the foundation of a new postdoc association at the University of Illinois. Establish connections with current postdocs,
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design and population of the webpage, and being point of contact for new postdocs.	
Educating tomorrow's chemists	Traveling 8 times per academic year to the READY program in Champaign to run science demos and talk to students taking classes in an alternative school setting.
Science in the classroom	Traveling once a month to Hyatt elementary school in north Chicago to run hands on science lessons with third-grade students.
Science club	Traveling once a year to Colombia to teach one-week intensive curse about polymer chemistry to socioeconomically impaired high school students that are interested in pursuit a STEM career.
ACS peer-reviewer	Reviewing of papers submitted to the Journals of the American Chemical Society for publication.

## PUBLICATIONS

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1. Deborah Turetsky, Diego M. Alzate-Sanchez, Megan C. Wason, Anna Yang, Hyunho Noh, Ahmet Atilgan, Timur Islamoglu, Omar K. Farha, and William R. Dichtel. Hot Press Synthesis of MOF/Textile Composites for Nerve Agent Detoxification. *ACS Materials Lett.* **2022**, 4, 1511-1515.
2. Diego M. Alzate-Sanchez, Morgan M. Cencer, Michael Rogalski, Mariana Kersh, Nancy Sottos, and Jeffrey S. Moore. Anisotropic Foams Via Frontal Polymerization. *Adv. Mater.* **2022**, 34, 2105821.
3. Yuhan Ling, Diego M. Alzate-Sanchez, Max J. Klemex, William R. Dichtel, and Damian E. Helbling. Evaluating the effects of water matrix constituents on micropollutant removal by activated carbon and  $\beta$ -cyclodextrin polymer adsorbents. *Water Res.* **2020**, 173, 115551.
4. Diego M. Alzate-Sanchez, Yuhan Ling, Chenjun Li, Benjamin P. Frank, Reiner Bleher, Howard Fairbrother, Damian E. Helbling, and William R. Dichtel.  $\beta$ -Cyclodextrin Polymers on Microcrystalline Cellulose as a Granular Media for Organic Micropollutant Removal from Water. *ACS Appl. Mater. Interfaces* **2019**, 11, 8089-8096.
5. Federico Cinzia, Salvatore Inguaggiato, Zoraida Chacón, John Makario Londoño, Edwing Gil, and Diego Alzate. Vapour discharges on Nevado del Ruiz during the recent activity: Clues on the composition of the deep hydrothermal system and its effects on thermal springs. *J. Volcanol. Geotherm. Res.* **2017**, 346, 40-53.
6. Salvatore Inguaggiato, John M. Londoño, Zoraida Chancón, Marcello Liotta, Edwin Gil, and Diego Alzate. The hydrothermal system of Cerro Machín volcano (Colombia): New magmatic signals observed during 2011-2013. *Chem. Geol.* **2017**, 469, 60-68.
7. Diego M. Alzate-Sanchez, Brian Smith, Alaaeddin Alsbaiiee, Juan P. Hinestroza, and William R. Dichtel. Cotton Fabric Functionalized with a  $\beta$ -Cyclodextrin Polymer Captures Organic Pollutants from Contaminated Air and Water. *Chem. Mater.* **2016**, 28, 8340-8346.

8. Claudio Inguaggiato, Paolo Censi, Pierpaolo Zuddas, Jhon M. Londoño, Zoraida Chacon, Diego Alzate, Lorenzo Brusca, and Walter D'Alessandro. Geochemistry of REE, Zr and Hf in a wide range of pH and water composition: The Nevado del Ruiz volcano-hydrothermal system (Colombia). *Chem. Geol.* **2015**, *417*, 125-133.
9. Sugey M. Martinez-Gomez, Diego M. Alzate-Sanchez, William Rodriguez-Cordoba, Cesar A. Sierra, and Cristian Ochoa-Puentes. Competitive One-Pot Reactions: Simultaneous Synthesis of Decahydroacridine-1,8-diones and 1,8-Dioxi-octahydroxanthenes and Photophysical Characterization. *Synth. Commun.* **2014**, *44*, 648-659.
10. Carlos Diaz, Diego Alzate, Ricaurte Rodriguez, and Cesar A. Sierra. High yield and stereospecific synthesis of segmented poly (p-phenylene vinylene) by the Heck reaction. *Synth. Met.* **2013**, *172*, 32-36.
11. Diego M. Alzate, Cesar A. Sierra, and Juan P. Hinestrosa. High-Yield Synthesis of the novel (E,E)-2,5-dimethoxy-1,4-bis[2-(4-ethylcarboxilatestyril)] benzene by the Heck reaction. *Synth. Commun.* **2013**, *43*, 2280-2285.
12. Diego M. Alzate, Ricaurte Rodríguez, and Cesar A. Sierra. Fluorescence quantum yield in phenylenevinylene systems. *Rev. Colomb. Quím.* **2010**, *39*, 309-319.

## PATENTS AND PATENT APPLICATIONS

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1. William R Dichtel, Alaaeddin Alsbaiee, Brian J Smith, Juan Hinestrosa, Diego Alzate-Sanchez, Leilei Xiao, Yuhang Ling, Damian Helbling. Porous cyclodextrin polymeric materials and methods of making and using same. U.S. Patent 10882023, **2018**.

## PRESENTATIONS

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1. International school of materials for sustainable development and energy, Erice, Italy (Contributed/Poster) **06/2022**.
2. Universidad del Caribe, Puerto Rico (Invited/Oral) **12/2021**.
3. ACS National meeting, Atlanta, GA (Contributed/Oral) **08/2021**.
4. Soft Matter for All, Virtual Conference (Contributed/Oral) **10/2020**.
5. IUPAC Polymers and Organic Chemistry Conference, Las Palmas, France (Contributed/Oral) **06/2018**.
6. ACS National meeting, Washington, DC (Contributed/Oral) **08/2017**.
7. ACS National meeting, Philadelphia, PA (Contributed/Poster) **08/2016**.
8. Congreso latinoamericano de química, Cartagena, Colombia (Contributed/Poster) **09/2010**.