

NICHOLAS SCHULMAN

PhD, CFEI

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 nschulman@explico.com

**MARINE & TRAFFIC ACCIDENT
 RECONSTRUCTION | FIRE & EXPLOSION**

EDUCATION

	CORNELL UNIVERSITY	
PhD	Chemical Engineering	2023
MS	Chemical Engineering	2022
	CITY COLLEGE OF CITY UNIVERSITY OF NEW YORK	
BE	Chemical Engineering	2018

LICENSES & CERTIFICATIONS

40-Hour Hazardous Waste Operation and
 Emergency Response Certification
 Certified Fire and Explosions Investigator
 Engineer in Training (EIT)

PROFESSIONAL PROFILE

Dr. Nicholas Schulman is a Scientist at Explico whose work focuses on vehicle and marine accident reconstruction and fire & explosion investigations. He applies principles of chemical engineering, mechanical engineering, fire dynamics, and materials behavior to analyze incident mechanisms, evaluate ignition sources, and assess fire and explosion dynamics across residential, commercial, and industrial settings. His work is performed using accepted forensic methodologies, including NFPA 921 and NFPA 1033, and reflects engineering analysis consistent with forensic engineering practice.

Dr. Schulman conducts scene examinations, documents and preserves physical evidence, and evaluates physical, chemical, and documentary materials to support origin-and-cause determinations. His investigation experience includes residential structure fires involving appliances, li-ion battery containing products, and spontaneous combustion; combustible dust incidents at grain and processing facilities; and incidents involving water-reactive and other chemically reactive materials. He has also investigated industrial and process-related incidents, including distillation and extraction operations, hazardous waste treatment, and chemical releases, and supports vehicle and marine-related fire investigations involving mechanical, electrical, and chemical ignition scenarios.

Dr. Schulman supports litigation, subrogation, and regulatory matters through technically rigorous analysis and clear communication of findings. His experience includes engineering litigation and arbitration support, development of technical reports and expert support materials, and collaboration with attorneys, insurers, and multidisciplinary investigation teams. He applies dispersion, fire, and explosion modeling tools, controlled recreations, laboratory analysis, and engineering judgment to synthesize complex technical information into objective, defensible conclusions relevant to accident reconstruction and fire and explosion investigations.



AREAS OF EXPERTISE

Fire and Explosion Investigation
Origin and Cause Analysis
Process Safety Management
Incident Investigation
Root Cause Analysis
Engineering and Construction
Product Safety and Failures
Consequence Analysis and Risk Assessment
Reactive Chemistry
Chemical Process Engineering

EXPERIENCE

Explico

2026 - Present *Scientist*

U.S. Chemical Safety and Hazard Investigation Board

2025 *Chemical Engineer*

Exponent

2023 - 2025 *Senior Associate*

Cornell University

2018 - 2023 *Graduate Researcher*

2019 - 2021 *Graduate Teaching Assistant*

AWARDS AND HONORS

City College of New York, Mini Circuits John Kaylie Scholarship

City College of New York, Patell Prize for Excellence in Chemical Engineering

Cornell University, Corning Incorporated Sponsored GEM PhD Fellowship

Cornell University, Graduates School Dean Scholar

PhD, CFEI

PUBLICATIONS

Schulman, N.S.; Reding, N.; Cox, B.; Ogle, R., "Consequence Analysis of Satartia CO₂ Release," AIChE Global Congress on Process Safety, 2025, https://www.aiche-cep.com/cep magazine/november_2025/MobilePagedArticle.action?articleId=2092578

Ogle, R.; Schneider, J.; Schulman, N.; Cox, B., Risk-Based Facility Siting of CO₂ Pipelines. Process Safety Progress 2025, <https://doi.org/10.1002/prs.70018>

Cox, B. L.; Schulman, N.; Morrison, D. T., Blue Skies, Green Risk Matrices: Managing the Hazards Associated with Air Pollution Control Equipment. Process Safety Progress 2025, <https://doi.org/10.1002/prs.70011>

Salim, M. G., Vasudevan, V., Schulman, N., Zamani, S., Kersey, K. D., Joshi, Y., AlAmer, M., Choi, J. I., Jang, S. S., Joo, Y. L., Thermoresponsive Conductivity of Graphene-Based Fibers. Small 2023, 2204981. <https://doi.org/10.1002/sml.202204981>

PRESENTATIONS

Schulman, NS, Reding N, Cox BL, Ogle RA, Schneider, J. Consequence Analysis of Satartia Carbon Dioxide Release. 21st Global Congress on Process Safety, Houston, TX, April 6-10, 2025.

Ogle RA, Cox BL, Schulman, N, Schneider, J. The Urgency of Risk-Based Facility Siting of Carbon Dioxide Pipelines. 20th Global Congress on Process Safety, New Orleans, LA, March 24-28, 2024.

Cox BL, Schulman NS, Morrison DR. Blue Skies, Green Risk Matrices — Managing the Hazards Associated with Air Pollution Control Equipment. American Institute of Chemical Engineers, 2024 Spring National Meeting, 13th Process Safety Management Mentoring, New Orleans, LA, March 24-28, 2024.

Mattson, J, Theisen, E, Schulman, N, et al. Rapidly solidified glassy metallic ribbons-a vitrifying-flow model. Virtual Presentation. 20th ISCST Symposium Virtual Event. 2020.

Schulman, N., Chen, G., Sionnest, PG. Mercury Telluride Quantum Dots: Study of their synthesis for application in infrared photoconductors and photodetectors. University of Chicago MRSEC REU Program, Chicago, IL, 2017.

Schulman, N., Wolfgang, V., Strom, V., Belvoa, L. ZnO films developed via inkjet printing technology for application in dye sensitized solar cells. Poster Presentation, Royal Institute of Technology, Stockholm, Sweden, 2016.

PhD, CFEI

PROFESSIONAL DEVELOPMENT

AIChE

AIChE Process Safety Book Camp, Houston, TX, August 2025

BakerRisk

Incident Investigation and Scene Documentation & Evidence Collection Trainings, Houston, TX, August 2025

ThinkReliability

ThinkReliability Cause Mapping Root Cause Analysis Training, Denver, CO, July 2025

IAAI

CFITrainer Tested Programs (online)

- *Basic Electricity*
- *Electric & Hybrid Vehicle Fires*
- *Electric Safety*
- *Explosion Dynamics*
- *Fire Chemistry*
- *Fundamentals of Residential Building Construction*
- *Introduction to Evidence*
- *Lithium-Ion Battery Fires*
- *Motor Vehicles: Engine and Ignition, Electrical, and Fuel Systems*
- *Motor Vehicles: Exhaust, Brake, Accessory, and Transmission Systems*
- *Residential Electrical Systems*
- *Using Arc Mapping*

Instructor-Led Programs

- *Electrical Aspects of Fire Investigation, San Francisco, CA, March 2025*

NAFI

Fire investigation Training Program (CFEI Certified), Seattle, WA, February 2024