Exponent®
Engineering & Scientific Consulting

Chau Reidy, Ph.D.

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Professional Profile

Dr. Vy is a polymer chemist specializing in the synthesis and characterization of advanced polymer systems with complex composition and architectures. She has developed membrane filtration products for cleanroom processes and applications that require ultrapure liquid chemistries, such as manufacturing processes for the semiconductor industry.

Dr. Vy has performed numerous product risk assessments in which due diligence considerations for materials compatibility, safety, and manufacturability were key success factors. She has experience with materials selection and compatibility assessment, formulation analysis including reverse engineering, and root cause analysis of polymeric materials. Dr. Vy has assisted clients with designing and executing standardized and non-standard test methods in a variety of contexts, including in support of intellectual property disputes and compliance testing of regulated products such as medical devices.

Prior to joining Exponent, Dr. Vy was a Process Development Engineer at Entegris and a Project Manager at Jordi Labs. At Entegris, she developed products and equipment, including scoping of early-stage technology for materials compatibility, safety, and manufacturability, and applying design of experiments (DOEs) and statistical analysis to make data-driven decisions for the optimization of new chemical processes. She consulted on equipment design and implementation for chemical handling, and innovated technologies to take products from prototype to high volume manufacturing. At Jordi Labs, Dr. Vy managed laboratory projects for clients from a variety of industries including personal care products, pharmaceuticals, medical devices, food and beverage, packaging, and engineered materials.

Dr. Vy obtained her Ph.D. in Polymer Science from the University of Connecticut. Her research focused on the synthesis of charged polymer brushes using surface-initiated controlled radical polymerization for applications in desalination and anti-fouling surfaces. Other areas of research Dr. Vy explored included anionic polymerization for the synthesis of model bottlebrush polymers, surface modification of silk and collagen for wound healing, and characterization of composites and microspheres prepared from graphene-stabilized water/oil emulsion systems. Dr. Vy also served as the chromatography lab manager for the Institute of Materials Science at UConn, performing routine maintenance, calibration, and troubleshooting of gel permeation and high performance liquid chromatography (GPC and HPLC) instrumentation. She is skilled in a variety of chemical and physical characterization techniques including gas chromatography mass spectrometry (GCMS), inductively coupled plasma mass spectrometry (ICPMS), nuclear magnetic resonance spectroscopy (NMR), Fourier transform infrared spectroscopy (FTIR), thermogravimetric analysis (TGA), differential scanning calorimetry (DSC), atomic force microscopy (AFM) and tribology.

Academic Credentials & Professional Honors

Ph.D., Polymer Science, University of Connecticut, 2020

B.S., Chemistry & Physics, Simmons University, 2013

GAANN Graduate Research Fellowship (2016-2020)

Society of Plastics Engineers Connecticut Section Scholarship (2017, 2018, 2019)

American Institute of Chemists Undergraduate Award in Chemistry (2013)

ACS Division of Analytical Chemistry Award (2011)

POLYED Undergraduate Award for Achievement in Organic Chemistry (2010)

Prior Experience

Senior Process Engineer, New Product Development, Entegris, 2020–2022

Chromatography Lab Manager, Institute of Materials Science, University of Connecticut, 2018-2019

Project Manager, Jordi Labs, 2013-2015

Professional Affiliations

American Chemical Society (ACS)

Society of Plastics Engineers (SPE)

Languages

French (France)

Vietnamese

Publications

Published as Ngoc Chau H. Vy, ORCID: 0000-0001-9007-4705

Surface-initiated passing-through polymerization on a rubber substrate: Supplying monomer from swollen substrates. McDermott, S. T.; Ward, S. P.; Vy, N. C. H.; Wang, Z.; Morales-Acosta, M. D.; Dobrynin, A. V.; Adamson, D. H. Macromolecules (2022).

Surface-initiated passing-through zwitterionic polymer brushes for salt-selective and antifouling materials. Vy, N. C. H.; Liyanage, C. D.; Williams, R. M.; Fang, J. M.; Kerns, P.; Schneipp, H.; Adamson, D. H. Macromolecules (2020).

Controlled Radical Polymerization of Hydrophilic and Zwitterionic Brush-Like Polymers from Silk Fibroin Surfaces. Heichel, D. L.; Ward, S. P. Vy, N. C. H.; Adamson, D. H.; Burke, K. A. Journal of Materials Chemistry B (2020).

Isolation and characterization of 1,3-bis(vinylbenzyl)thymine: copolymerization with vinylbenzyl thymine ammonium chloride. Vy, N. C. H.; Chen, N. B.; Martino, D. M.; Warner, J. C.; Lee, N. Journal of Polymers. (2017)

Existence of time lag in crystalline to smectic A (K–SmA) phase transition of 4-decyl-4-biphenylcarbonitrile (10CB) liquid crystal. McDonough, K.; Vy, N. C. H.; Sharma, D. Journal of Thermal Analysis and Calorimetry. (2014)