Exponent®
Engineering & Scientific Consulting

Alex Evans, Ph.D.
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Professional Profile

Dr. Evans specializes in materials characterization and application testing. He has extensive experience in a variety of polymerization techniques and polymer applications, specifically concerning adhesives, coatings, construction, and the oil and gas industry. Additionally, Dr. Evans has worked in projects related to emulsion polymerization chemical plant process optimization, route cause analysis, and quality improvement.

He holds a D.Phil. in Inorganic Chemistry from the University of Oxford and an MChem from the University of Warwick. His graduate research focused on the synthesis, characterization, and applications of functionalized polypropylenes. His expertise spans a broad array of analytical techniques, including differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), gel permeation chromatography (GPC), 1D, 2D, and variable temperature (VT) nuclear magnetic resonance spectroscopy (NMR), scanning electron microscopy (SEM), energy dispersive X-ray spectroscopy (EDS), powder and single crystal X-ray diffraction (XRD), rheology, Fourier-transform infrared spectroscopy (FTIR), and dynamic light scattering (DLS). Through the application of these techniques and a fundamental understanding of polymer chemistry, Dr. Evans investigates the behavior and performance of materials in industries including coatings, adhesives, batteries, automotive, and more.

After completion of his doctorate, Dr. Evans worked as a postdoctoral research associate at the University of Oxford, where he gained experience in taking new synthetic routes to pilot scale production. Prior to joining starting his D.Phil. and joining Exponent, Dr. Evans worked as a Product Improvement Chemist at Synthomer plc., where he led emulsion polymerization chemical plant process optimization, route cause analysis, and quality improvement projects within Europe. He provided operational support ensuring adherence to process safety standards while maintaining a strong focus on hazard identification, risk assessment, and safe operating procedures.

Academic Credentials & Professional Honors

Ph.D., Inorganic Chemistry, University of Oxford, UK, 2025

EPSRC Impact Acceleration Account Award, 2025.

Jamie Ferguson Chemistry Innovation Award, 2024.

Academic Appointments

Postdoctoral Research Associate, Inorganic Chemistry, University of Oxford, 2025

Prior Experience

Postdoctoral Research Associate, University of Oxford, 2025

Postdoctoral Research Associate, University of Oxford, 2025

Chemist, Synthomer plc., 2018-2020

Patents

UK Pat. Appl. GB2408339.6: Functionalised Polypropylene Copolymers (O'Hare D, Turner Z, Evans A).

UK Pat. Appl. GB202218265A, WO-2024121541-A1: Flame Retardant Polypropylene, June 2024 (O'Hare D, Turner Z, Evans A).

Publications

Evans A, Arnold TAQ, Ransom P, Binding S, Myers WK, Crumpton AE, Turner ZR, Buffet JC, O'Hare D. Synthesis, characterisation, and magnetic properties of a permethylindenyl manganocene. Dalton Transactions 2025; Advance Article.

Evans A, Collins Rice CG, Turner ZR, O'Hare D. Functionalized polypropylene copolymers as multisubstrate hot-melt. Adhesives 2025;17(23):34592–34601.

Collins Rice CG, Evans A, Turner ZR, Wattoom J, O'Hare D. Strategies for enhancing the processability of UHMWPE. Industrial Chemistry and Materials 2025; 3:178-190.

Evans A, Morris L, Turner ZR, O'Hare D. Phosphonate-functionalized polypropylenes: single-component flame retardants. ACS Applied Polymer Materials 2025; 7(4):2508–2516.

Evans A, Casale O, Morris L, Turner ZR, O'Hare D. Functionalized polypropylenes: a copolymerization and postmodification platform. Macromolecules 2024; 57(22):1-778–10791.

Chen C, Wang J, Evans A, O'Hare D. Boosting NIR laser marking efficiency of a transparent epoxy using a layered double hydroxide. ACS Applied Polymer Materials 2024; 6(14):8679–8686.

Tanaka J,‡ Evans A,‡ Gurnani P, Kerr A, Wilson P. Functionalisation and stabilisation of polymeric arsenical nanoparticles prepared by sequential reductive and radical cross-linking. Polymer Chemistry 2020; 11:2519–2531.

Presentations

Evans A, Casale O, Morris L, Collins Rice CG, Turner Z R, O'Hare D. Functionalized polypropylenes; a copolymerization and post-modification platform. Oral presentation, ACS Spring Conference, San Diego, CA, USA, 2025.

Evans A, Casale O, Morris L, Turner ZR, O'Hare D. Applied functional polypropylenes. Oral presentation, 50th World Polymer Congress, IUPAC MACRO, University of Warwick, UK, 2024.

Evans A, Morris L, Turner ZR, O'Hare D. Flame retardant polypropylenes. Oral presentation, Canadian Chemistry Conference and Exhibition, Vancouver, Canada, 2023.

Evans A, Morris L, Turner ZR, O'Hare D. Flame retardant polypropylenes. Oral presentation, Dalton, University of Warwick, UK, 2023.

Project Experience

Emulsion polymerization plant processes and route cause analysis (SBR, SA, MA).

Polyolefin synthesis and application testing (PP, PE)

Metallocene synthesis and catalysis