



Min Sheng

Department: School of Resources and Environmental Engineering
Professional field: Safety, Reactivity Hazard
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Profile

Chair Professor · Ph.D. Supervisor. Registered Professional Engineer (P.E.) in Michigan State, USA. Had led the Dow Reactive Chemicals (RC) lab in Midland, Michigan (Dow global headquarter) and the DuPont explosion hazard lab (the only reactivity hazard lab in DuPont globally). This Dow RC lab invented the accelerating rate calorimeter (ARC) in the 1979, which is still one of the most popular tools for reactivity hazard evaluation of both chemical process and Lithium battery.

Education

2007-2011 : Ph.D. degree, Chemical Engineer, Auburn University, AL, USA

2000-2007 : Master and Bachelor' s degree: Pharmaceutical Engineer, Tianjin University, China

Professional experiences:

2022-till now: Chair Professor, School of Resources and Environmental Engineering, East China University of Science & Technology

2018-2022: Technical Leader, Reactive Chemicals (RC) group, DowDuPont Ag Division (Corteva)

2012-2018: RC SME (subject matter experts), Reactive Chemicals (RC) group, The Dow Chemical Company, led the RC testing lab in Midland, Michigan (Dow global headquarter)

Research Field

1. Reactivity hazard evaluation
2. Battery thermal safety
3. Calorimetry application
4. Reaction kinetics
5. Process simulations

Research results and main published thesis

[1].Min Sheng*, Practical Estimation Techniques of Reaction Heat, Org. Process Res. Dev. 2021, 25, 8, 1862–1872

[2].Min Sheng*, Qiang Yang*, Darren Huff, Andrew Schafer, Craig Tucker, Daniel Valco, Thermal Instability and Associated Potential Safety Hazards of Rhodium(I) Precatalyst Complexes with weakly Coordinated Ligands, Org. Process Res. Dev., 2021, 25, 4, 1054–1064.

[3].Min Sheng*, Daniel Valco and Craig Tucker, Heat Loss in ARC Analysis and Thermal Lag for High Self-Heat Rates, Org. Process Res. Dev., 2021, 25, 1, 108-119.

[4].Yang, Qiang*; Sheng, Min; Yongliang Huang; Potential Safety Hazards Associated with Using N,N-Dimethylformamide in Chemical Reactions, Org. Process Res. Dev., 2020, 24, 9, 1586–1601

[5].Qiang Yang*; Min Sheng; et al., Potential Explosion Hazards Associated with the Autocatalytic Thermal Decomposition of Dimethyl Sulfoxide and Its Mixtures, Org. Process Res. Dev., 2020, 24, 6, 916–939.

[6].Min Sheng*, Daniel Valco, Craig Tucker, Elizabeth Cayo, Tyler Lopez, Practical Use of Differential Scanning Calorimetry (DSC) for Thermal Stability Hazard Evaluation, Org. Process Res. Dev., 2019, 23, 10, 2200-2209.

[7].Qiang Yang*; Min Sheng; James Henkelis; et al., Explosion Hazards of NaH in DMSO, DMF and DMAc, Org. Process Res. Dev., 2019, 23(10), 2210-2217

[8].Min Sheng, Florin Dan, et al., Calorimetric Method To Determine Self-Accelerating Polymerization Temperature (SAPT) for Monomer Transportation Regulation: A Heat Balance Approach, Org. Process Res. Dev., 2019, 23 (5), pp 750-761

[9].Min Sheng*, Florin Dan, et al., Calorimetric Method To Determine Self-Accelerating Polymerization Temperature (SAPT) for Monomer Transportation Regulation: Kinetics and Screening Criteria, Org. Process Res. Dev., 2019, 23 (5), pp 737-749

[10].Min Sheng*, D Frurip, D Gorman, Reactive chemical hazards of diazonium salts, Journal of Loss Prevention in the Process Industries, 2015, 38, 114

D. Gorman, J. Farr, R. Bellair, W. Freeman, D. Frurip, A. Hielscher, H. Johnstone, M. Linke, P. Murphy, Min Sheng, K. van Gelder, D. Viveros. Enhanced NOAA chemical reactivity worksheet for determining chemical compatibility, Process Safety Progress, 2014, 33(1), 4–18