Jing Guo

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EDUCATION

University of Virginia – Charlottesville, VA Aug 2016
Ph. D. in Chemical Engineering
Thesis: Unfolding and Aggregation of Monoclonal Antibodies during Cation Exchange Chromatography
Thesis advisor: Prof. Giorgio Carta

Tianjin University – Tianjin, China June 2011
B.S. in Chemical Engineering

RESEARCH EXPERIENCE

University of Delaware – Newark, DE Sep. 2016-Present
Postdoctoral Researcher, Delaware Biotechnology Institute & Department of Chemical and Biomolecular Engineering
Advisors: Prof. Kelvin H. Lee and Prof. Abraham M. Lenhoff

University of Virginia – Charlottesville, VA Aug. 2011-Aug. 2016
Research assistant, Department of Chemical Engineering
Thesis advisor: Prof. Giorgio Carta

- Explored the elution behavior of multiple monoclonal antibodies on a broad range of CEX resins containing different types of surface extenders and different pores sizes.
- Characterized the nature of the aggregates formed using size exclusion chromatography (SEC) and dynamic light scattering (DLS) and determined how their formation depends on buffer pH, hold time before elution, loading salt concentration, loading flow rate, and protein mass load.
- Investigated a potential connection between unfolding/aggregation behavior and the tentacle architecture of Fractogel EMD SO3- resin, particularly with respect to the very high binding capacities and unique diffusional mass transfer kinetics that are often associated with polymer-functionalized ion exchangers.
- Established a molecular level understanding of the unfolding/aggregation behavior using hydrogen-deuterium exchange mass spectrometry (HX-MS) to determine peptide-level conformational changes caused by binding and/or elution on the resin.

TEACHING EXPERIENCE

University of Virginia – Charlottesville, VA May, Oct 2015, May 2016
Tutor, Protein Chromatography short course

- Teaching the laboratory and data analysis sessions for industrial participants in engineering fundamentals and measurements for process development and scale-up, including protein isocratic elution, breakthrough and linear gradient elution experiments.