Looking for Co-op in 2020 Fall and 2021 Spring

Qingxuan (Chelsea) Li

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PROFILE

- Familiar with analytical chemistry and materials characterization for DNA, proteins, polymers, nanoparticles using UV spectrophotometer, HPLC, DSC, Zetasizer, ELISA, DNA gel electrophoresis
- Hands-on experiences in 7L Sartorius bioreactors and control panel, E. coli fermentation, CHO cell fed-batch study, DNA plasmid purification, Nova biomedical and Cedex cell counter
- Nanotechnology, microfluidics, single cell analysis, MATLAB image processing

EDUCATIONAL BACKGROUNDS

Northeastern University, Boston, USA 09/2017 - 2021
PhD candidate, Chemical Engineering, GPA:3.88/4.0
Relevant coursework included: Chemical Engineering Mathematics, Transport Process, Kinetics, Bioinformatics, Chemical Engineering Thermodynamics, Cellular Engineering

Universidad Politécnica de Madrid, Madrid, Spain 02/2016 - 08/2016
Exchange Student, Biomedical & Physical Engineering

Beijing Institute of Technology, Beijing, China 08/2015 - 06/2017
Master of Science, Materials Engineering, GPA: 3.9/4.0
Relevant coursework included: Polymerization, Organic Chemistry, Physical Chemistry, Inorganic Chemistry, Materials Engineering,

ACADEMIC & PROFESSIONAL EXPERIENCE

Northeastern University Teaching Assistant, 01/2020 - Present
- Chemostat, Membrane reactor, Fed-batch reactor modeling using Python
- Non-ideal reactor modeling and conversion prediction for real reactor using residence time distribution
- Drafted homework and homework solution; held office hours and gave class for exam review

Su Nanomaterials and Nanomedicines group Research Assistant, 09/2017 - Present
- Initiate high-throughput single cell screening bioassay for biological toxicity test using MATLAB
- Design new quantitative single cell Immune response immunoassay for cytokine detection (ELISA) using microwell chip
- Formulated multifunctional carbon dot nanoparticle for cancer targeting and nucleoli staining
- Host conference section and gave presentations at several conferences

Boston Institute of Biotechnology, Inc. Upstream Research Associate Internship, 05/2019 – 09/2019
- Determined Fed-batch growth profile of CHO cells in shake flask and 7L bioreactor
- Purified DNA plasmid from E. coli using QIAGEN kit and characterized using DNA gel electrophoresis
- Studied cell density of E. coli using UV-vis spectrophotometer under different feed and inoculation media
- Calculated Oxygen Transfer Coefficient (k_{La}) for bioreactors at different agitation speed, working volume and sparge rate

Biomedical and biomacromolecule Lab Research Assistant, 07/2015 - 07/2017
- Synthesized polysaccharide conjugate (Heparin-Paclitaxel) with pH sensitivity as smart drug carrier for cancer treatment
- Quantified Paclitaxel release under different pH condition from Heparin-Paclitaxel nanomedicine using HPLC
- Helped with design of porous biocompatible poly(ε-caprolactone) (PCL) scaffold for vascular tissue engineering
- Led an undergraduate research group for Undergraduate Technology and Innovation Competition for two years

EXPERTISE & SKILLS

Analytical chemistry: Materials synthesis and characterization (HPLC, FTIR, XRD, TG, DLS, zeta potential), organic chemistry, DNA purification, fluorescent microscope, surface modification

Data analysis and programing: MATLAB programming, data analysis using Python, Autodesk, ImageJ, Materials Studio, Photoshop, Origin

Biotechnology: Mammalian cell culture (HeLa cells and CHO cells), bacterial cell culture (E. coli), bioreactor, biological assay (cell based and immune- assays), spectrophotometer, flow cytometry

PUBLICATIONS (Selected) Total:12 (google scholar link: https://scholar.google.com/citations?user=WbjcTx8AAAAJ&hl=en)

1.**Q. Li,** L. M, M. Su. Single Identical Cell Toxicity Assay on Coordinately Ordered Patterns. *Analytica Chimica Acta*. 2019, 1065, 56-63. IF: 5.123;

2.**Q. Li,** Q. Wei, W. Zheng, Z. Wang, M. Su. Enhanced Radiation Shielding with Conformal Light-Weight Nanoparticle-Polymer Composite. *ACS applied materials & interfaces*, 2018, 10, 35510-35515. IF: 8.097;