



# Current RBI Fellows as of August, 2018

## Chemical and Biomolecular Engineering

Last	First	Sch	Title	Advisor(s)
Chang	Chaoyi	ChBE	Computational catalyst screening for lignocellulosic biomass to sugar alcohols	Andrew Medford
Chiang	Leo Ya-Dong	ChBE	Advanced porous materials and processes for biorefinery separations	Sankar Nair/Ryan Lively
Du	Xu	ChBE	Lignin-based green polyurethanes from 100% sustainable natural materials	Yulin Deng
Ellebracht	Nathan	ChBE	Nanocellulose-based biomimetic chemocatalysts for conversion of furan compounds to fuels	Chris Jones
Kruyer	Nicholas	ChBE	Biorefining: Catalytic processes for the production of value-added chemicals for lignin (Production of adipic acid from catechol)	Pamela Peralta-Yahya/Andreas Bommarius
Kwok	Thomas	ChBE	Process systems engineering of novel mild chemical pretreatment options of lignocellulosics	Andreas Bommarius/Matthew Realff
Li	Vincent	ChBE	Paper substrates for advanced technologies and analyses	Yulin Deng/H. Jerry Qi
Liao	Jianshan	ChBE	Rheological characterization of nanocellulose for metrology and quality control research	Victor Breedveld
Liu	Wei	ChBE	Design of natural nanofiber composites: An integrated approach to control barrier and mechanical properties of cellulose- and chitin-based nanomaterials	Yulin Deng



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Risteen	Bailey	ChBE	Protein-assisted functional active packaging for safety and security: The intersection of celluloses and fungal hydrophobins with semiconducting polymers	Elsa Reichmanis/Paul Russo
Satam	Chinmay	ChBE	Design of natural nanofiber composites: An integrated approach to control barrier and mechanical properties of cellulose- and chitin-based nanomaterials	Carson Meredith
Stellato	Michael	ChBE	Biorefining: Catalytic processes for the production of value-added chemicals for lignin (production of phenol and catechol from lignin-derived monomers and dimers)	Andreas Bommarius/ Carsten Sievers/Valerie Thomas
Tricker	Andrew	ChBE	Biorefining: Catalytic processes for the production of value-added chemicals for lignin (mechanocatalytic depolymerization of lignin)	Carsten Sievers/ Matthew Realff/Valerie Thomas
Wang	Songchang	ChBE	Encapsulation of the liquid paper sizing agent ASA	Sven Behrens/Carson Meredith
Wang	Zhongzhen	ChBE	Tunable polymeric membranes for energy-efficient black liquor concentration	Sankar Nair/Meisha Shofner/Scott Siquefield



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## Chemistry and Biochemistry

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Bullard	Krista	CHEM	A universal approach to polymer-CNC composites using host-guest complexes	Wil Gutekunst, Mohan Srinivasarao
Ronaghi	Nima	CHEM	Upgrading cellulose byproducts to value-added chemicals and fuels through the Garcia-Gonzalez pathway	Stefan France/Chris Jones

## Mechanical Engineering

Collins	Asher	ME	Mechanistic methods to control intra-web transport in paper forming	Cyrus Aidun
Gong	Xuejian	ME	Big-data driven predictive analysis for smart manufacturing process operations in the pulp, paper and packaging industries	Jianxin (Roger) Jiao/ Nagi Gebraeel
Hamel	Craig	ME	3D-Printed high strength and lightweight epoxy/nano cellulose composite products for automobile and aerospace applications	H. Jerry Qi Yulin Deng
Lee	Vincent	ME	Analysis of multiphase foaming and flow characteristics in the foaming section	Cyrus Aidun
Oztekin	Dennis	ME	Fiber orientation in multiphase forming technology	Cyrus Aidun



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## Materials Science and Engineering

Last	First	Sch	Title	Advisor(s)
Banerjee	Manali	MSE	Customizable cast films containing active pharmaceutical ingredients	Blair Brettmann
Chen	Junhe	MSE	Conversion of lignin into moldable bulk graphite	Donggang Yao, Yulin Deng
Hanson	Kasey	MSE	Corrosion control in superheaters to increase kraft recovery boiler efficiency	Preet Singh
Haque	Ejaz	MSE	Nanocellulose as reinforcement: An approach towards light-weighting of polymer composites	Kyriaki Kalaitzidou/ Karl Jacob
He	Liang	MSE	Corrosion behavior of new lean duplex stainless steels in changing pulp and paper mill environments	Preet Singh
Irvin	Cameron	MSE	Design of natural nanofiber composites: An integrated approach to control barrier and mechanical properties of cellulose- and chitin-based nanomaterials	Meisha Shofner
Khan	Nasreen	MSE	Increasing solids into the dryer via rational design of polyelectrolyte complexes	Blair Brettmann
Lang	Augustus	MSE	Electrofunctional paper: Highly conductive and switchable displays	John Reynolds/Robert Moon
Le	Luc Hong	MSE	Nanocellulose-based bio-nanocomposites	Karl Jacob/ Kyriaki Kalaitzidou



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Li	Yi	MSE	New functionality via vapor-phase surface modification	Mark Losego
Na	Yoon Joo	MSE	Strain-field mining: The key to engineering the strength and fracture toughness of paper and packaging products	Chris Muhlstein
Orr	Matthew	MSE	Tensegrity-inspired microstructures for cellulose nanocrystal composites in film and packaging applications	Meisha Shofner
Paluskiewicz	Sarah	MSE	Is it really creep? Cyclic fatigue damage accumulation mechanisms in paper	Chris Muhlstein
Qiu	Ke	MSE	Bio-inspired, ultra-strong biopolymer-based nanocomposites	Karl Jacob/ Hamid Garmestani
Semenikhin	Nikolay	MSE	Rapid, reliable optical analysis of cellulose nanocrystal morphology/size	Joseph Perry/Robert Moon
Wu	Gaoxiang	MSE	Effect of strain on repassivation and corrosion behavior of duplex stainless steels in pulp and paper mill environments	Preet Singh
Yu	Jiwoo	MSE	Low-cost, large-scale manufacturing of multifunctional porous cellulose/nanoparticle microspheres for water treatment	Zhiqun Lin