Chaoyi Chang

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EDUCATION

Nankai University (2012-2014) / Tianjin University (2014-2016) Tianjin, China

BS in Chemistry/BS in Chemical Engineering, Major: Molecular Science and Engineering (Dual Degree Program)

Overall GPA 3.79/4.0, Major 3.82/4.0; Rank: 1st out of 56

- National Scholarship (#1 Student in Program)
- Tianjin Government Scholarship (#1 Student in Program)
- Tianjin Bohai Security Company Scholarship (Overall #1 Student in Program in 3 years)

Georgia Institute of Technology (2016-present) Atlanta**,**GA, US

Overall GPA 4.0/4.0 (08.2016 - present)

- Exemplary Academic Achievement

PUBLICATION

- Tunable nanochannels along graphene oxide/polymer core-shell nanosheets to enhance proton conductivity. *Adv. Funct. Mater.* 2015, 25 (48): 7502-7511. Guangwei He, **Chaoyi Chang**, Mingzhao Xu, Shen Hu, Lingqiao Li, Jing Zhao, Zhen Li, Yongheng Yin, Mingyue Gang, Hong Wu, Xinlin Yang, Michael D. Guiver, and Zhongyi Jiang* DOI: 10.1002/adfm.201503229
- Highly proton-conducting, methanol-blocking Nafion composite membrane enabled by surface-coating crosslinked sulfonated graphene oxide. 2016 *Chem. Comm.* 2016, 52, 2173-2176. Guangwei He, Xueyi He, Xinglin Wang, **Chaoyi Chang,** Jing Zhao, Zongyu Li, Hong Wu and Zhongyi Jiang* DOI: 10.1039/C5CC07406A
- Bio-inspired robust composite membrane with rapid proton transport channels. *Acs. Nano.* In Preparation

RESEARCH EXPERIENCE

Tianjin University, Green Chemical Technology of Ministry of Education Tianjin, China

Aromatic copolymer with fluorinated brushes anion exchange membrane (Zhongyi Jiang's group) 07/2015-07/2016

- Synthesized aromatic polymer backbones through condensation polymerization.
- Grafted fluorinated brushes to polymer backbone through ATRP.
- Characterized the structure of polymer by NMR and FTIR.

Nacre-inspired ultrathin proton exchange membrane (Zhongyi Jiang's group) 07/2014-07/2016

- Created ultrathin brick-and-mortar structures with proton transport channels and mechanical properties, shortening the pathway and saving materials.
- Spin-coated graphene oxide and diaminobenzenesulfonic acid to tune interlayer spacing between graphene sheets and assembled sulfonated poly (ether ether ketone) with graphene oxide to provide conducting sites for protons.
- Tested the solubility of several mineral salts including K_2CO_3 (mainly used as catalysts in polycondensation) in organic solvents, in order to separate K_2CO_3 from target products.
- Characterized polymers by NMR and FTIR, membranes with XRD, TEM, TGA and methanol-water permeability.

Nankai University, Tianjin Key Laboratory of Inorganic Chemistry Laboratory Tianjin, China

Synthesis and application of aza-crown ether (Peng Cheng's group) 06/2013-12/2013

- Researched synthesis and application of aza-crown ether, improving previous toxic magnetic resonance imaging by enhancing coordinated interaction between Gd and ligands.
- Improved accuracy and targeting to organs through introduction of COR on fabricated precursors, DOTA and DTPA.
- Characterized chemical structures using ^{1}HNMR and Liquid Chromatogram, separated compounds by chromatographic column based on difference of polarity, distinguished under ultraviolet rays.
- Brought Template method to synthesis of ligands.

Georgia Institute of Technology Atlanta, Georgia

Computational catalyst screening for lignocellulosic biomass to sugar alcohols (Andrew J. Medford's group)

- Calculated adsorption energy of acetaldehyde process products on molybdenum oxide.
- Working on Xylose on Pt (111) surface stereoisomers.

ADDITIONAL EXPERIENCE

BPNC Company Jilin, China

Intern 08/2014

- Understood neopentyl glycol manufacturing process, from materials to final production.
- Tested purity of neopentyl glycol via liquid chromatography.
- Analyzed problem of columns causing rising yield.