

WILFRED CHEN

Gore Professor

Department of Chemical and Biomolecular Engineering

University of Delaware

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EDUCATION

Ph.D., Chemical Engineering 1993
California Institute of Technology

B.S., Chemical Engineering 1988
University of California, Los Angeles

PROFESSIONAL EXPERIENCE

Gore Professor of Chemical Engineering January 2011-Present
Department of Chemical Engineering, University of Delaware

Delaware Biotechnology Institute Faculty Fellow January 2011- Present
University of Delaware

UC Presidential Chair July 2006-June 2010
Department of Chemical and Environmental Engineering, University of California,
Riverside

Professor of Chemical Engineering July 2002-December 2010
Department of Chemical and Environmental Engineering, University of California,
Riverside

Associate Professor of Chemical Engineering July 1998-June 2002
Department of Chemical and Environmental Engineering, University of California,
Riverside

Assistant Professor of Chemical Engineering January 1994-June 1998
Department of Chemical and Environmental Engineering, University of California,
Riverside

Faculty Member January 1998-2010
Microbiology Graduate Program, University of California, Riverside

Faculty Member January 1996-2010

Environmental Toxicology Program, University of California, Riverside

Postdoctoral Research Associate

November 92-November 93

Institute of Biotechnology, ETH-Honggerberg, Zurich, Switzerland

HONORS

Fellows, American Institute for Medical and Biological Engineering (AIMBE), 2022

Michael M. Abbott Lectureship, Department of Chemical and Biological Engineering, Rensselaer Polytechnic Institute, April 24-25, 2019.

Fan-Tsan Chen Lectureship, Department of Chemical Engineering, National Taiwan University, November 2018

Food, Pharmaceutical & Bioengineering Division Award, AIChE, 2018

Marvin J. Johnson Award in Microbial & Biochemical Technology, ACS, 2017

Daniel I.C. Wang Award for Excellence in Biochemical Engineering, AIChE and SBE, 2015

Biotechnology Progress Award for Excellence in Biological Engineering Publication, SBE, 2012

Gore Professor of Chemical Engineering, January 2011-Present

Food, Pharmaceutical, and Bioengineering Division Plenary Session, Biochemical Engineering (Area 15c) Award, AIChE, 2008

Fellows, American Association for the Advancement of Science, 2006

UC Presidential Chair, July 2006-June 2010

Invited Participant of the Fifth Annual U.S./Japan Frontiers of Engineering Symposium, 2005

Invited Participant of the National Academy of Engineering's Fourth Annual Symposium on Frontiers of Engineering, 1998

NSF Faculty Early Career Development Award, 1997

Regents Faculty Fellowship, UCR, 1997

Editor, Biochemical Engineering Journal, 1/16-Present

Associate Editor, Biotechnology Journal, 1/13-Present

Associate Editor, AIChE Journal, 10/16-Present

Associate Editor, Applied Biochemistry and Biotechnology, July 03-Dec 2010
Associate Editor, Biochemical Engineering Journal, 3/08-12/15
Editorial Board, Biotechnology and Bioengineering, 2/03-Present
Editorial Board, Applied and Environmental Microbiology, 1/04-Present
Editorial Board, Microbial Cell Factories, 6/04-7/14
Editorial Board, Journal of Biological Engineering, 1/07-Present
Editorial Board, The Open Biotechnology Journal, 1/08-Present
Editorial Board, Bioengineered, 9/09-Present
Editorial Board, Annual Review of Chemical and Biomolecular Engineering, 8/20-Present

NASA Certificate of Recognition, 1995
National Institutes of Health Predoctoral Traineeship, Caltech, 1990-1992
Corning Graduate Fellowship, Caltech, 1988
Chervon Outstanding Senior Award in Chemical Engineering, UCLA, 1988
Outstanding Junior Award in Chemical Engineering, UCLA, 1987
Munson Memorial Scholarship, UCLA, 1987
Norman Chemistry Award, Los Angeles Valley College, 1985
Mathematical Department Award, Los Angeles Valley College, 1985

RESEARCH INTERESTS

Proteins are the most versatile among the various biological building blocks. However, the strength of proteins - their versatility and specific interactions - also complicates and hinders their systematic design and engineering. Our lab has been interested in exploiting the modular nature of protein domains to design synthetic complexes that can perform new biological functions across different length scales. By adding logical and stimuli responsive components into the design, smart protein complexes can be created to sense and adapt to the constantly changing cellular environments. Research in our laboratory is focused on the development of new synthetic biology tools in connecting exchangeable protein domains into functional devices for applications in biocatalysis, biosensing, and therapeutics.

PUBLICATIONS

283. Antonio G. Goncalves, Emily J. Hartzell, Millicent O. Sullivan, and **Wilfred Chen**, Recombinant protein polymer-antibody conjugates for biomedical applications, *Advanced Drug Delivery Reviews*, Submitted.

282. Victoria M. Hunt and **Wilfred Chen**, A microRNA-gated thgRNA platform for multiplexed activation of gene expression in mammalian cells, *Chem. Comm.*, **58**, 6215-6218, 2022.

281. Rachel M. Lieser, Emily J. Hartzell, Daniel Yur, Millicent O. Sullivan, and **Wilfred Chen**, EGFR ligand clustering on E2 bionanoparticles for targeted delivery of chemotherapeutics to breast cancer cells, *Bioconjugate Chemistry*, **33**, 452-462, 2022.

280. Rachel M. Lieser, Qirun Li, **Wilfred Chen**, and Millicent O. Sullivan, Incorporation of endosomolytic peptides with varying disruption mechanisms into EGFR-targeted protein conjugates: The effect on intracellular protein delivery and EGFR specificity in breast cancer cells, *Molecular Pharmaceutics*, **19**, 661-673, 2022.
279. Victoria M. Hunt and **Wilfred Chen**, Deciphering the design rules of toehold-gated sgRNA for conditional activation of gene expression and protein degradation in mammalian cells, *ACS Synthetic Biology*, **11**, 397-405, 2022.
278. Rebecca P. Chen and **Wilfred Chen**, Tunable and modular miRNA classifier through indirect associative toehold strand displacement, *ACS Synthetic Biology*, In Revision.
277. Alexander A. Mitkas, Mauricio Valverde, and **Wilfred Chen**, Dynamic modulation of enzyme activity by synthetic CRISPR-Cas6 endonucleases, *Nat. Chem. Biol.*, **18**, 492-500, 2022.
276. Maryam Raeeszadeh-Sarmazdeh and **Wilfred Chen**, Recent Advances in Cell Surface Display Technologies for Directed Protein Evolution. In *Protein Engineering: Tools and Applications*, First Edition. Edited by Huimin Zhao, Wiley, pp. 81-104, 2021.
275. Qing Sun, Maryam Raeeszadeh-Sarmazdeh, Shen-Long Tsai, and **Wilfred Chen**, Strategies for Multienzyme Assemblies, *Methods in Molecular Biology*, **2487**, 113-131, 2022.
274. Emily J. Hartzell, Justin Terr, and **Wilfred Chen**, Engineering a blue light inducible SpyTag system (BLISS), *J. Am. Chem. Soc.*, **143**, 8572-8577, 2021.
273. Daniel Yur, Rachel M. Lieser, Millicent O. Sullivan, and **Wilfred Chen**, Engineering bio nanoparticles for improved biosensing and bioimaging, *Curr. Opin. Biotechnol.*, **71**, 41-48, 2021.
272. Yikun Huang, Mu-Ping Nieh, **Wilfred Chen**, and Yu Lei, Outer Membrane Vesicles (OMVs) Enabled Bio-applications: A critical review, *Biotechnol. Bioeng.*, **119**, 34-47, 2022.
271. Emily A. Berckman and **Wilfred Chen**, Self-assembling protein nanocages for modular enzyme assembly by orthogonal bioconjugation, *Biotechnol. Prog.*, **37**, e3190, 2021.
270. Rachel M. Lieser, Daniel Yur, Millicent O. Sullivan, and **Wilfred Chen**, Site-specific bioconjugation approaches for enhanced delivery of protein therapeutics and protein drug carriers, *Bioconjugate Chemistry*, **31**, 2272-2282, 2020.
269. Andrew S. Gaynor and **Wilfred Chen**, Conditional Protein Rescue (CPR) by Binding-Induced Protective Shielding, *ACS Synthetic Biology*, **9**, 2639-2647, 2020.
268. Emily J. Hartzell, Rachel M. Lieser, Millicent O. Sullivan, and **Wilfred Chen**, Modular Hepatitis B Virus-Like Particle Platform for Biosensing and Drug Delivery, *ACS Nano*, **14**, 12642-12651, 2020.

267. Emily A. Berckman and **Wilfred Chen**, A modular approach for dCas9-mediated enzyme cascading via orthogonal bioconjugation, *Chem. Comm.*, **56**, 11426-11428, 2020.
266. Joun Lee, Sanggon Kim, Syed Mubeen, Ashok Mulchandani, **Wilfred Chen**, Yongho Choa, and Nosang V. Myung, Synthesis of Gold Nanostructures Using Glycine as the Reducing Agent, *Nanotechnology*, **31**, 455601, 2020.
265. Rebecca P. Chen, Victoria M. Hunt, Alexander A. Mitkas, Ka-Hei Siu, and **Wilfred Chen**, Controlling metabolic flux by toehold-mediated strand displacement, *Curr. Opin. Biotechnol.*, **66**, 150-157, 2020.
264. **Wilfred Chen**, Cynthia Collins, Patrick, Michael P. Harold, A tribute to Frances Arnold, *AIChE Journal*, **66**, e16923, 2020.
263. Emily A. Berckman, Emily J. Hartzell, Alexander A. Mitkas, Qing Sun, and **Wilfred Chen**, Biological assembly of modular protein building blocks as sensing, delivery, and therapeutics agents, *Annual Review of Chemical and Biomolecular Engineering*, **11**, 35-62, 2020.
262. Yikun Huang, Haomin Liu, **Wilfred Chen**, Mu-Ping Nieh, and Yu Lei, Genetically Engineered Bio-nanoparticles with Co-expressed Enzyme Reporter and Recognition Element for IgG Immunoassay, *Sensors and Actuators Reports*, **1**, 100003, 2019.
261. Yikun Huang, André O'Reilly Beringhs, Qi Chen, Donghui Song, **Wilfred Chen**, Xiuling Lu, Tai-Hsi Fan, Mu-Ping Nieh, and Yu Lei, Genetically-engineered bacterial outer membrane vesicles with expressed nano-luciferase reporter for *in vivo* bioluminescence kinetic modeling through non-invasive imaging, *ACS Applied Bio Materials*, **2**, 5608-5615, 2019.
260. Adam Wanekaya, **Wilfred Chen**, Nosang V. Myung, and Ashok Mulchandani, Conducting Polymer Nanowire-Based Bio-Field Effect Transistor for Label-Free Detection: Smart Biosensor Technology. George K. Knopf, Amarjeet S. Bassi (Ed.). CRC Press. pp. 149-164, 2018.
259. Rebecca P. Chen, Andrew S. Gaynor, and **Wilfred Chen**, Synthetic biology approaches for conditional protein degradation, *Biotechnology Advances*, **37**, 107446, 2019.
258. Heejae Kim, Andrew S. Gaynor and **Wilfred Chen**, Tunable modulation of antibody-antigen interaction by protease cleavage of protein M, *Biotechnol. Bioeng.*, **116**, 2834-2842, 2019.
257. Emily A. Berckman and **Wilfred Chen**, Exploiting dCas9 fusion proteins for dynamic assembly of synthetic metabolons, *Chem. Comm.* **55**, 8219-8222, 2019.
256. Lin Lu, Liang Yuan, Libo Zhang, Tianyu Zhu, **Wilfred Chen**, Guiren Wang, and Qian Wang, Artificial Cellulosome Complex from the Self-Assembly of NTANi Functionalized Polymeric Micelles and Cellulases, *ChemBioChem.*, **20**, 1394-1399, 2019.

255. Qing Sun, Shen-Long Tsai, and **Wilfred Chen**, Artificial scaffolds for enhanced biocatalysis, *Methods in Enzymology*, **617**, 363-384, 2019.
254. Rachel M. Lieser, **Wilfred Chen**, and Millicent O. Sullivan, Controlled EGFR ligand display on cancer suicide enzymes via UAA engineering for enhanced intracellular delivery in breast cancer cells, *Bioconjugate Chemistry*, **30**, 432-442, 2019.
253. **Wilfred Chen**, Michael P. Harold, Douglas S. Clark, and Chaitan Khosla, A tribute to James E. Bailey, *AIChE Journal*, **64**, 4178-4178, 2018.
252. Chaitan Khosla, Douglas S. Clark, and **Wilfred Chen**, A tribute to Professor Jay Bailey: A pioneer in biochemical engineering, *AIChE Journal*, **64**, 4179-4181, 2018.
251. Andrew R. Swartz and **Wilfred Chen**, Rapid quantification of monoclonal antibody titer in cell culture harvests by antibody-induced Z-ELP-E2 nanoparticle crosslinking, *Anal. Chem.*, **90**, 14447-14452, 2018.
250. Andrew R. Swartz and **Wilfred Chen**, SpyTag/Spycatcher functionalization of E2 nanocages with stimuli-responsive Z-ELP affinity domains for tunable monoclonal antibody binding and precipitation properties, *Bioconjugate Chemistry*, **29**, 3113-3120, 2018.
249. Andrew Swartz, Xuankuo Xu, Steven Traylor, Zheng Jian Li and **Wilfred Chen**, High-efficiency affinity precipitation of multiple industrial mAbs and Fc-fusion proteins from cell culture harvests using Z-ELP-E2 nanocages, *Biotechnol. Bioeng.*, **115**, 2039-2047, 2018.
248. Ka-Hei Siu and **Wilfred Chen**, Riboregulated toehold-gated gRNA for programmable CRISPR-Cas9 function, *Nature Chem. Biol.*, **15**, 217-22, 2019.
247. Rebecca P. Chen, Daniel Blackstock, Qing Sun, and **Wilfred Chen**, Dynamic protein assembly by programmable DNA strand displacement, *Nature Chemistry*, **10**, 474-481, 2018.
246. Fang Liu, **Wilfred Chen**, and Nosang Myung, Controlled growth of gold nanocrystals on biogenic As-S nanotubes by galvanic displacement, *Nanotechnology*, **29**, 055604, 2018.
245. R. Kyle Bennett, Lisa M. Steinberg, **Wilfred Chen**, Eleftherios T. Papoutsakis, Engineering the bioconversion of methane and methanol to fuels and chemicals in native and synthetic methylotrophs, *Curr. Opin. Biotechnol.*, **50**, 81-93, 2018.
244. Andrew Swartz, Xuankuo Xu, Steven Traylor, Zheng Jian Li and **Wilfred Chen**, One-step affinity capture and precipitation for improved purification of an industrial monoclonal antibody using Z-ELP functionalized nanocages, *Biotechnol. Bioeng.*, **115**, 423-432, 2018.
243. Qi Chen, Sooyoun Yu, Nosang Myung, and **Wilfred Chen**, DNA-guided assembly of a five-component enzyme cascade for enhanced conversion of cellulose to gluconic acid and H₂O₂, *J. Biotechnol.*, **263**, 30-35, 2017.

242. Qi Chen, Sharon Rozovsky, and **Wilfred Chen**, Engineering multi-functional bacterial outer membrane vesicles as modular nanodevices for biosensing and bioimaging, *Chem. Comm.*, **53**, 7569-7572, 2017.
241. Andrew S. Gaynor and **Wilfred Chen**, Induced Prodrug Activation by Conditional Protein Degradation, *J. Biotechnol.*, **260**, 62-66, 2017.
240. Ka-Hei Siu and **Wilfred Chen**, Control of the yeast mating pathway by reconstitution of functional α -Factor using split intein-catalyzed reactions, *ACS Synthetic Biology*, **6**, 1453-1460, 2017.
239. Andrew R. Swartz, Qing Sun and **Wilfred Chen**, Ligand-induced crosslinking of Z-ELP-functionalized E2 protein nanoparticles for enhanced affinity precipitation of antibodies, *Biomacromolecules*, **18**, 1654-1659, 2017.
238. Chen Guo, Heejae Kim, Elisa M. Ovadia, Christine M. Mourafetis, Mingrui Yang, **Wilfred Chen**, and April M. Kloxin, Bio-orthogonal conjugation and enzymatically triggered release of proteins within multi-layered hydrogels, *Acta Biomaterialia*, **56**, 80-90, 2017.
237. Ming Dong, Meghan M. Klems, Tara D. Gonzalez, Lisa Steinberg, **Wilfred Chen**, Eleftherios T. Papoutsakis, and Brian J. Bahnson, In vitro methanol production from methyl coenzyme M using the *Methanosarcina barkeri* MtaABC protein complex. *Biotechnol. Prog.*, **33**, 1243-1249, 2017.
236. Mei Yang, Jing Bao, Changjun Hou, Danqun Huo, Qiuchen Dong, Xiaoyu Ma, Xiangcheng Sun, Khaled Hussein Galil, **Wilfred Chen**, and Yu Lei, Sensitive and Selective Electrochemical Biosensor based on ELP-OPH/BSA/TiO₂NFs/AuNPs for Direct Determination of p-Nitrophenyl Substituted Organophosphate Pesticides, *Journal of The Electrochemical Society*, **164**, G17-G22, 2017.
235. Heejae Kim and **Wilfred Chen**, A non-chromatographic protein purification strategy using src 3 homology domains as generalized capture domains, *J. Biotechnol.*, **234**, 27-34, 2016.
234. Maryam Raeeszadeh-Sarmazdeh, Emily Hartzell, J. Vincent Price, and **Wilfred Chen**, Protein Nanoparticles as Multifunctional Biocatalysts and Health Assessment Sensors, *Curr. Opin. Chem. Eng.*, **13**, 109-118, 2016.
233. J. Vincent Price, Long Chen, W. Brian Whitaker, E. Terry Papoutsakis, and **Wilfred Chen**, Scaffoldless Engineered Enzyme Assembly for Enhanced Methanol Utilization, *Proc. Natl. Acad. Sci. USA*, **113**, 12691-12696, 2016.
232. Jing Bao, Changjun Hou, Qiuchen Dong, Xiaoyu Ma, Jun Chen, Danqun Huo, Mei Yang, Khaled Hussein Abd El Galil, **Wilfred Chen**, and Yu Lei, ELP-OPH/BSA/TiO₂ nanofibers/c-MWCNTs based biosensor for sensitive and selective determination of p-nitrophenyl substituted organophosphate pesticides in aqueous system, *Biosensors and Bioelectronics*, **85**, 935-942, 2016.

231. Qing Sun and **Wilfred Chen**, HaloTag mediated artificial cellulosome assembly on rolling circle amplification DNA template for efficient cellulose hydrolysis, *Chem. Comm.* **52**, 6701-6704, 2016.
230. Ka-Hei Siu, Rebecca P. Chen, Qing Sun, Long Chen, Shen-Long Tsai, and **Wilfred Chen**, Synthetic Scaffolds for Pathway Enhancement, *Curr. Opin. Biotechnol.*, **36**, 98-106, 2015.
229. Qing Sun, Qi Chen, Daniel Blackstock, and **Wilfred Chen**, Post-translational modification of bio-nanoparticles as a modular platform for biosensor assembly, *ACS Nano*, **9**, 8554-8561, 2015.
228. Heejae Kim, Ka-Hei Siu, Maryam Raeeszadeh Sarmazdeh, Qing Sun, Qi Chen, and **Wilfred Chen**, Bioengineering strategies to generate artificial protein complexes, *Biotechnol. Bioeng.*, **112**, 1495-1505, 2015.
227. Qi Chen, Qing Sun, Nicholas M. Molino, Szu-Wen Wang, Eric T. Boder, and **Wilfred Chen**, Sortase A-mediated multi-functionalization of protein nanoparticles, *Chem. Comm.*, **51**, 12107-12110, 2015.
226. Daniel Blackstock and **Wilfred Chen**, Halo-tag mediated self-labeling of fluorescent proteins to molecular beacons for nucleic acid detection, *Chem. Comm.*, **50**, 13735-13738, 2014.
225. Rahul D Sheth, Bharat Bhut, Mi Jin, Zhengjian Li, **Wilfred Chen**, and Steven M. Cramer, Development of an ELP-Z Based mAb Affinity Precipitation Process Using Scaled-Down Filtration Techniques, *J. Biotechnol.*, **192**, 11-19, 2014.
224. Daniel Blackstock, Qing Sun, and **Wilfred Chen**, Fluorescent protein-based molecular beacons by zinc finger protein-guided assembly, *Biotechnol. Bioeng.*, **112**, 236-241, 2015.
223. Kishore K. Krishnani, **Wilfred Chen**, and Ashok Mulchandani, Bactericidal activity of elastin-like polypeptide biopolymer with polyhistidine domain and silver, *Colloids and Surfaces B: Biointerfaces*, **119**, 66-70, 2014.
222. Rahul D. Sheth, Mi Jin, Bharat V. Bhut, Jia Liu, Jongchan Lee, Rieble Siegfried, Zhengjian Li, **Wilfred Chen**, Steven M. Cramer, Affinity precipitation of monoclonal antibody from industrial harvest feedstock using ELP-Z stimuli responsive biopolymers, *Biotechnol. Bioeng.*, **111**, 1595-1603, 2014.
221. Rebecca Chen, Qi Chen, Heejae Kim, Ka-Hei Siu, Qing Sun, Shen-Long Tsai and **Wilfred Chen**, Biomolecular Scaffolds for Enhanced Signaling and Catalytic Efficiency, *Curr. Opin. Biotechnol.*, **28**, 59-68, 2014.
220. Qing Sun, Bhawna Madan, Shen-Long Tsai, Matthew P. DeLisa, and **Wilfred Chen**, Creation of artificial cellulosomes on DNA scaffolds by zinc finger protein-guided assembly for efficient cellulose hydrolysis, *Chem. Comm.*, **50**, 1423-1425, 2014.

219. Miso Park, Qing Sun, Fang Liu, Matthew P. DeLisa, and **Wilfred Chen**, Positional assembly of enzymes on bacterial outer membrane vesicles for cascade reactions, *PLoS one*, **9**, e97103, 2014.
218. Lakshmi N Cella, Payal Biswas, Marylynn V. Yates, Ashok Mulchandani, **Wilfred Chen**, Quantitative assessment of *in vivo* HIV protease activity using genetically engineered QD-based FRET probes, *Biotechnol. Bioeng.*, **111**, 1082–1087, 2014.
217. Daniel Blackstock, Miso Park, Qing Sun, Shen-Long Tsai, and **Wilfred Chen**, Engineering protein modules for diagnostic applications, *Curr. Opin. Chem. Eng.*, **2**, 416–424, 2013.
216. Miso Park, Shen-Long Tsai, and **Wilfred Chen**, Microbial biosensors: Engineered microorganisms as the sensing machinery, *Sensors*, **13**, 5777-5795, 2013.
215. Lakshmi N Cella, Daniel Blackstock, Marylynn A. Yates, Ashok Mulchandani, **Wilfred Chen**, Detection of RNA Viruses: Current technologies and Future perspectives, *Critical Reviews in Eukaryotic Gene Expression*, **23**, 125-137, 2013.
214. Fang Liu, Scott Banta, and **Wilfred Chen**, Functional assembly of a multi-enzyme methanol oxidation cascade on a surface-displayed trifunctional scaffold for enhanced NADH production, *Chem. Comm.*, **49**, 3766-3768, 2013.
213. Rahul D. Sheth, Bhawna Madan, **Wilfred Chen**, Steven M. Cramer, High throughput screening for the development of a monoclonal antibody affinity precipitation step using ELP-Z stimuli responsive biopolymers, *Biotechnol. Bioeng.*, **110**, 2664-2676, 2013.
212. Fang Liu and **Wilfred Chen**, Engineering a recyclable ELP capturing scaffold for non-chromatographic protein purification, *Biotechnol Prog.*, **29**, 968-971, 2013.
211. Nicha Chartuprayoon, Youngwoo Rheem, James C. K. Ng, Jin Nam, **Wilfred Chen**, and Nosang V. Myung, Polypyrrole nanoribbon based chemiresistive immunosensor for viral plant pathogen detection, *Anal. Methods*, **5**, 3497-3502, 2013.
210. Divya Sivaraman, Hsiao-Yun Yeh, Ashok Mulchandani, Marylynn V. Yates and **Wilfred Chen**, Use of flow cytometry for the rapid and quantitative detection of poliovirus-infected cells via TAT peptide-delivered molecular beacons, *Appl. Environ. Microbiol.*, **79**, 696-700, 2013.
209. Shen-Long Tsai, Miso Park, **Wilfred Chen**, Size-modulated synergy of cellulase clustering for enhanced cellulose hydrolysis, *Biotechnol. J.*, **8**, 257–261, 2013.
208. Heejae Kim, Qing Sun, Fang Liu, Shen-Long Tsai, and **Wilfred Chen**, Biologically assembled nanobiocatalysts, *Topics in Catalysis*, **55**, 1138-1145, 2012.
207. Shen-Long Tsai, Nancy A. DaSilva, and **Wilfred Chen**, Functional display of complex cellulosomes on the yeast surface via adaptive assembly, *ACS Synthetic Biology*, **2**, 14-21, 2013.

206. Sneha Srikrishnan, **Wilfred Chen**, and Nancy A. Da Silva, Functional assembly and characterization of a modular xylanosome for hemicellulose hydrolysis in yeast, *Biotechnol. Bioeng.*, **110**, 275–285, 2013.
205. Bhawna Madan, Garima Chaudhary, Steven M. Cramer, and **Wilfred Chen**, ELP-z and ELP-zz capturing scaffolds for the purification of immunoglobulins by affinity precipitation, *J. Biotechnol.*, **163**, 10-16, 2013.
204. Fang Liu, Shen-Long Tsai, Bhawna Madan, and **Wilfred Chen**, Engineering a high-affinity scaffold for non-chromatographic protein purification via intein-mediated cleavage, *Biotechnol. Bioeng.*, **109**, 2829–2835, 2012.
203. Maxwell C. Kum, Hyunsung Jung, Nicha Chartuprayoon, **Wilfred Chen**, Ashok Mulchandani, and Nosang V. Myung, Tuning electrical and optoelectronic properties of single cadmium telluride nanoribbon, *J. Phys. Chem.*, **116**, 9202-9208, 2012.
202. Michael W.Y. Shen, Dhawal Shah, **Wilfred Chen**, Nancy Da Silva, Enhanced arsenate uptake in yeast engineered for overexpression of the *pho84* phosphate transporter, *Biotechnol. Prog.*, **28**, 654–661, 2012.
201. Rajwant S. Bedi, Rui Cai, Cory O’Neill, Derek E. Beving, Stephen Foster, Sean Guthrie, **Wilfred Chen**, and Yushan Yan, Hydrophilic and antimicrobial Ag-exchanged zeolite A coatings: A year-long durability study and preliminary evidence for their general microbiocidal efficacy to bacteria, fungus and yeast, *Microporous and Mesoporous Materials*, **151**, 352-357, 2012.
200. Garima Goyal, Shen Long Tsai, Bhawna Madan, Nancy A. DaSilva, and **Wilfred Chen**, Simultaneous cell growth and ethanol production from cellulose by an engineered yeast consortium displaying a functional mini-cellulosome, *Microb. Cell Factories*, **10**, 89, 2011.
199. Xiaojian Chen, **Wilfred Chen**, Ashok Mulchandani and Umar Mohideen, Application of displacement principle for detecting heavy metal ions and EDTA using microcantilevers, *Sensors & Actuators: B. Chemical*, **161**, 203-208, 2012.
198. Daniela Dunams, Payal Sarkar, **Wilfred Chen**, and Marylynn Yates , Simultaneous detection of infectious human echoviruses and adenoviruses by an in situ nuclease-resistant molecular beacon-based assay, *Appl. Environ. Microbiol.*, **78**, 1548-1588, 2012.
197. Shen-Long Tsai, Shailendra Singh, Nancy A. DaSilva, and **Wilfred Chen**, Co-expression of *Arabidopsis thaliana* phytochelatin synthase and *Treponema denticola* cysteine desulfhydrase for enhanced arsenic accumulation, *Biotechnol. Bioeng.*, **109**, 605–608, 2012.
196. Joun S. Lee, Syed Mubeen, Carlos M. Hangarter, Ashok Mulchandani, **Wilfred Chen**, and Nosang V. Myung, Selective and rapid room temperature detection of H₂S using gold nanoparticle chain arrays, *Electroanalysis*, **23**, 2623-2628, 2011.

195. Shenghua Jiang, Fang Liu, Min-Gyu Kim, Jae-Hong Lim, Kun-Jae Lee, Yong-Ho Choa, Kyung Song, Michael J. Sadowsky, **Wilfred Chen**, Nosang V. Myung, and Hor-Gil Hur, Synthesis of chalcogenide ternary and quaternary nanotubes through directed compositional alterations of bacterial As-S nanotubes, *J. of Materials Chemistry*, **21**, 10277-10279, 2011.
194. Payal Ganguli, **Wilfred Chen**, and Marylynn V. Yates, Detection of Murine Norovirus-1 using TAT peptide delivered molecular beacon, *Appl. Environ. Microbiol.*, **77**, 5517-5520, 2011.
193. Payal Biswas, Lakshmi N Cella, Seung Hyun Kang, Ashok Mulchandani, Marylynn V. Yates, and **Wilfred Chen**, A quantum-dot based protein module for *in vivo* monitoring of protease activity through fluorescence resonance energy transfer, *Chem. Comm.*, **47**, 5259-5261, 2011.
192. Divya Sivaraman, Payal Biswas, Lakshmi N Cella, Marylynn V. Yates and **Wilfred Chen**, Detecting RNA viruses in living mammalian cells by fluorescence microscopy, *Trends in Biotechnol.*, **29**, 307-313, 2011.
191. Basanta K. Das, Chaker Tlili, Sushmee Badhulika, Lakshmi N. Cella, **Wilfred Chen**, and Ashok Mulchandani, Single-walled carbon nanotubes chemiresistor aptasensors for small molecules: picomolar level detection of adenosine triphosphate, *Chem. Comm.*, **47**, 3793–3795, 2011.
190. Shen-Long Tsai, Garima Goyal, and **Wilfred Chen**, Surface display of a functional minicellulosome by intracellular complementation using a synthetic yeast consortium and its application to cellulose hydrolysis and ethanol production, *Appl. Environ. Microbiol.*, **76**, 7514-7520, 2010.
189. Mannesh A. Banger, **Wilfred Chen**, Nosang V. Myung, and Ashok Mulchandani, Conducting polymer 1-dimensional nanostructures for FET sensors, *Thin Solid Films*, **519**, 964-973, 2010.
188. Fang Liu, Seung Hyun Kang, Young-In Lee, Yong-ho Choa, Ashok Mulchandani, Nosang V. Myung, and **Wilfred Chen**, Enzyme mediated synthesis of phytochelatin-capped CdS nanocrystals, *Appl. Phys. Letts.*, **97**, 123703, 2010.
187. Miso Park, Lakshmi N Cella, **Wilfred Chen**, Nosang V. Myung, and Ashok Mulchandani, Carbon nanotubes-based chemiresistive immunosensor for small molecules: Detection of nitroaromatic explosives, *Biosensors and Bioelectronics*, **26**, 1297-1301, 2010.
186. Dhammanand J. Shirale, Mangesh A. Bangar, **Wilfred Chen**, Nosang V. Myung and Ashok Mulchandani, Effect of Aspect Ratio (Length:Diameter) on a Single Polypyrrole Nanowire FET Device, *J. Phys. Chem. C*, **114**, 13375-13380, 2010.
185. Dhawal Shah, Michael W.Y. Shen, **Wilfred Chen**, Nancy A. Da Silva, Enhanced arsenic accumulation in *Saccharomyces cerevisiae* overexpressing transporters Fps1p or Hxt7p, *J.*

Biotechnol., **150**, 101-107, 2010.

184. Kawai Tam, Cuong Tu, Jin-Hoon Lee, Min Lai, Chong Hyun Chang, Youngwoo Rheem, **Wilfred Chen**, Hor-Gil Hur, and Nosang V. Myung, Growth Mechanism of Amorphous Selenium Nanoparticles Synthesis by *Shewanella* sp. HN-41, *Bioscience, Biotechnology and Biochemistry*, **74**, 696-700, 2010.

183. Mangesh A. Bangar, Dhammanand J. Shirale, Hemant Purohit, **Wilfred Chen**, Nosang V. Myung, and Ashok Mulchandani, Single Conducting Polymer Nanowire Based Sequence-Specific, Base-Pair-Length Dependent Label-free DNA Sensor, *Electroanal.*, **23**, 371-379, 2011.

182. Dhammanand J. Shirale, Mangesh A. Bangar, Miso Park, Marylynn V. Yates, **Wilfred Chen**, Nosang V. Myung and Ashok Mulchandani, Label-Free Chemiresistive Immunosensors for Viruses, *Environ. Sci. Technol.*, **44**, 9030-9035, 2010.

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26. **Wilfred Chen**, Fredi Bruhlmann, Richard Richins, and Ashok Mulchandani, Engineering of Improved Enzymes and Microbes for Bioremediation, *Curr. Opin. Biotechnol.*, **10**, 137-141, 1999.

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23. Leila H. Choe, **Wilfred Chen** and Kelvin H. Lee, Proteome Analysis of Fis Overproduction in *Escherichia coli*, *Electrophoresis*, **20**, 798-805, 1999.
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2. Neilay Dedhia, Thomas Hottiger, **Wilfred Chen**, and James E. Bailey, Genetic Manipulation of Central Carbon Metabolism in *Escherichia coli*, p. 59-62 in *Harnessing Biotechnology for the 21st Century* (M. R. Ladisch and A. Bose, Eds), American Chemical Society, New York, 1992.

1. **Wilfred Chen**, James E. Bailey and Sun Bok Lee, Molecular Design of Expression Systems: Comparison of Different Repressor Control Configurations Using Molecular Mechanism Models, *Biotechnol. Bioeng.*, **38**, 679-687, 1991.

INVITED LECTURES

1. “Dynamic modulation of protein functions by strand displacement”, Department of Chemical and Environmental Engineering, University of California, Riverside, April 15, 2022.
2. “Dynamic modulation of protein functions by strand displacement”, Department of Chemical and Biomolecular Engineering, Rice University, October 19, 2021.
3. “Engineering Synthetic Protein Scaffolds with Modular Functionalities”, Center for Bioengineering, University of California, Santa Barbara, October 8, 2019.
4. “Adding Logic to Complex Protein Functions”, Department of Chemical and Biological Engineering, Princeton University, September 11, 2019.
5. “Synthetic Protein Devices for Dynamic Modulation of Cellular Phenotypes”, Michael M. Abbot Lecture, Department of Chemical and Biological Engineering, Rensselaer Polytechnic Institute, April 25, 2019.
6. “Engineering Synthetic Protein Scaffolds with Modular Functionalities”, Michael M. Abbot Lecture, Department of Chemical and Biological Engineering, Rensselaer Polytechnic Institute, April 24, 2019.
7. “Synthetic Protein Devices for Dynamic Modulation of Cellular Phenotypes”, Department of Chemical and Biomolecular Engineering, Case Western Reserve University, March 7, 2019.
8. “Engineering Synthetic Protein Scaffolds with Modular Functionalities”, 24th Young Asian Biological Engineers' Community, Taiwan, November 16, 2018.
9. “Adding Logic to Complex Protein Functions”, Fan-Tsan Chen Lectureship, Department of Chemical Engineering, National Taiwan University, November 14, 2018.
10. “Synthetic Modulation of Protein Functions by Dynamic Strand Displacement”, Department of Chemical Engineering, University of New Hampshire, October 12, 2018.
11. “Adding Logic to Complex Protein Functions”, Department of Chemical Engineering, University of California, Santa Barbara, October 2, 2018.

12. “Synthetic Modulation of Protein Functions by Dynamic Strand Displacement”, Department of Chemical and Biomolecular Engineering, Johns Hopkins University, September 20, 2018.
13. “Adding Logic to Complex Protein Functions”, Institute of Chemical Sciences and Engineering, ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE, April 20, 2018.
14. “Building Complex Protein Functions at the Intersection of Nanofabrication and Synthetic Biology”, NUS Synthetic Biology for Clinical and Technological Innovation, National University of Singapore, March 9, 2018.
15. “Adding Logic to Complex Protein Functions”, Department of Chemical and Biomolecular Engineering, National University of Singapore, March 8, 2018.
16. “Adding Logic to Complex Protein Functions”, 5th International Conference on Cellular & Molecular Bioengineering (ICCMB5), Plenary Speaker, School of Chemical and Biomedical Engineering, Nanyang Technological University, March 5, 2018.
17. “Adding Logic to Complex Protein Functions”, Department of Chemical Engineering, University of Michigan, February 13, 2018.
18. “Engineering Synthetic Protein Scaffolds with Modular Functionalities”, Center for Bio/Molecular Science and Engineering colloquium series, Naval Research Laboratory, January 19, 2018.
19. “Adding Logic to Complex Protein Functions”, Department of Chemical and Biological Engineering, Illinois Institute of Technology, September 13, 2017.
20. “Adding Logic to Complex Protein Functions”, Department of Chemical and Biochemical Engineering, Rutgers University, March 30, 2017.
21. “Engineering Synthetic Protein Scaffolds with Modular Functionalities”, Department of Chemistry and Biochemistry, University of South Carolina, March 7, 2017.
22. “Adding Logic to Complex Protein Functions”, Department of Chemical and Biomolecular Engineering, University of California, Los Angeles, February 17, 2017.
23. “Adding Logic to Complex Protein Functions”, Department of Chemical and Biomolecular Engineering, University of Maryland, December 6, 2016.
24. “Adding Logic to Complex Protein Functions”, Department of Chemical and Biomolecular Engineering, Clemson University, November 3, 2016.
25. “Adding Logic to Complex Protein Functions”, Department of Chemical and Biomolecular Engineering, Rice University, October 26, 2016.

26. "Adding Logic to Complex Protein Functions", Department of Chemical and Biomolecular Engineering, University of Connecticut, September 8 2016.
27. "Adding Logic to Complex Protein Functions", Fraunhofer-CMB, May 12, 2016.
28. "Engineering Synthetic Protein Scaffolds with Modular Functionalities", Department of Chemical and Biomolecular Engineering, University of Tennessee, October 20, 2015.
29. "Engineering Synthetic Protein Scaffolds with Modular Functionalities", Department of Chemical and Biological Engineering, University of Colorado, November 4, 2014.
30. "Engineering Synthetic Protein Scaffolds with Modular Functionalities", Department of Chemical Engineering, The City College of New York, September 15, 2014.
31. "Engineering Synthetic Protein Scaffolds with Modular Functionalities", Department of Chemical and Biomolecular Engineering, University of Houston, September 12, 2014.
32. "Engineering Synthetic Protein Scaffolds with Modular Functionalities", Department of Chemical and Biological Engineering, Northwestern University, May 22, 2014.
33. "Engineering Synthetic Protein Scaffolds with Modular Functionalities", Department of Chemical and Biological Engineering, Tufts University, April 27, 2014.
34. "Engineering Synthetic Protein Scaffolds with Modular Functionalities", Department of Chemical Engineering, University of Washington, November 25, 2013.
35. "Engineering Synthetic Protein Scaffolds with Modular Functionalities", Department of Chemical Engineering, University of Massachusetts Amherst, October 3, 2013.
36. "Improving the Biology of Enzyme Fuel Cells", Chemical Heritage Foundation, September 16, 2013.
37. "Engineering Synthetic Protein Scaffolds with Modular Functionalities", Department of Chemical Engineering, Lehigh University, September 11, 2013.
38. "Biomomolecular Tools for Sustainable Energy and Improved Human Health", Department of Chemical and Biological Engineering, Iowa State University, March 7, 2013.
39. "Engineering Synthetic Protein Scaffolds with Exchangeable Functional Domains", School for Engineering of Matter, Transport and Energy, Arizona State University, February 18, 2013.
40. "Engineering Synthetic Protein Scaffolds with Exchangeable Functional Domains", Department of Chemical, Biochemical and Environmental Engineering, University of Maryland, Baltimore County, December 10, 2012.

41. "Biomomolecular Tools for Sustainable Energy and Improved Human Health", The Chemistry-Biology Interface Program, University of Delaware, November 28, 2012.
42. "Artificial Cellulosomes for Enhanced Biomass Processing", Department of Chemistry and Biochemistry, University of Delaware, October 26, 2012.
43. "Biomomolecular Tools for Sustainable Energy and Improved Human Health", Department of Chemical and Biological Engineering, Princeton University, University, September 26, 2012.
44. "A Biomolecular Engineering Approach for Environmental Remediation", DuPont Corporate Remediation Group, May 30, 2012.
45. "Biomolecular Tools for Sustainable Energy and Improved Human Health", Department of Chemical and Biological Engineering, Rensselaer Polytechnic Institute, May 23, 2012.
46. "Artificial cellulosomes for enhanced biomass processing", 5th Annual Advances in Biomolecular Engineering Symposium, The New York Academy of Sciences, April 27, 2012.
47. "Biomomolecular Tools for Sustainable Energy and Improved Human Health", Department of Chemical and Biomolecular Engineering, Ohio State University, March 1, 2012.
48. "A Biomolecular Engineering Approach for Environmental Remediation", Department of Civil and Environmental Engineering, University of Delaware, February 17, 2012.
49. "Biomomolecular Tools for Sustainable Energy and Improved Human Health", Department of Chemistry, University of California, Davis, February 14, 2012.
50. "Real-Time Monitoring of Viral Replication and Anti-Viral Drug Discovery by Molecular FRET Probes", Department of Animal and Food Science, University of Delaware, September 26, 2011.
51. "Biomomolecular Tools for Sustainable Energy and Improved Human Health", Department of Chemical and Biological Engineering, University of Buffalo - SUNY, March 23, 2011.
52. "Biomomolecular Tools for Sustainable Energy and Improved Human Health", Department of Chemical and Biological Engineering, Polytechnic Institute - NYU, March 11, 2011.
53. "Biomomolecular Tools for Sustainable Energy and Improved Human Health", Department of Chemical Engineering, Columbia University, September 28, 2010.
54. "Real-Time Monitoring of Viral Replication and Anti-Viral Drug Discovery by Molecular Fret Probes", Department of Chemical Engineering and Material Sciences, University of Minnesota, February 16, 2010.

55. "Biomolecular Tools for Sustainable Energy and Improved Human Health", Department of Chemical Engineering, University of Delaware, February 8, 2010.
56. "Biomolecular Tools for Sustainable Energy and Improved Human Health", Department of Biochemistry, Cal State Fullerton, October 8, 2009.
57. "Real-Time Monitoring of Viral Replication and Anti-Viral Drug Discovery by Molecular FRET Probes", MedImmune Inc., April 13, 2009.
58. "Biomolecular Tools for Sustainable Energy and Improved Human Health", Lindsay Lecture Series, Department of Chemical Engineering, Texas A&M University, February 4, 2009.
59. "A Biomolecular Engineering Approach for Environmental Remediation and Sensing", Department of Chemical and Biological Engineering, Tufts University, April 14, 2008.
60. "A Biomolecular Engineering Approach for Environmental Remediation and Sensing", Biological Process Technology Institute, University of Minnesota, March 27, 2008.
61. "Biomolecular Engineering: A New Frontier in Environmental Biotechnology", Center for Environmental Systems Microbiology Distinguished Lecture Series, Georgia Institute of Technology, March 28, 2007.
62. "Environmental Biotechnology: Challenges and Opportunities for Chemical Engineers", Bioengineering Department, University of Maryland, College Park, May 2, 2006.
63. "Environmental Biotechnology: Challenges and Opportunities for Chemical Engineers", Department of Chemical and Biological Engineering, Rensselaer Polytechnic Institute, April 20, 2006.
64. "Environmental Biotechnology: Challenges and Opportunities for Chemical Engineers", Department of Chemical Engineering and Materials Science, University of Southern California, April 17, 2006.
65. "Biomolecular Engineering: A New Frontier in Environmental Biotechnology", Department of Civil and Environmental Engineering, Arizona State University, April 4, 2006.
66. "Environmental Biotechnology: Challenges and Opportunities for Chemical Engineers", Department of Chemical Engineering, Penn State University, February 16, 2006.
67. "A Biomolecular Engineering Approach for Environmental Remediation and Sensing", Department of Chemical and Biomolecular Engineering, University of California, Los Angeles, January 20, 2006.

68. "Biomolecular Engineering: A New Frontier in Environmental Biotechnology", Department of Civil and Environmental Engineering, University of California, Los Angeles, November 29, 2005.
69. "A Biomolecular Engineering Approach for Environmental Remediation and Sensing", Department of Chemical Engineering, Texas Tech University, September 9, 2005.
70. "Biomolecular Approaches for Biosensing", The Biotechnology Research Institute, Connam National University, Korea, June 26, 2005.
71. "Engineering Improved Microbes and Enzymes for Biodegradation of Nerve Agents", Korean Society for Microbiology and Biotechnology (KMB) Annual Symposium, Seoul, Korea, June 28, 2005.
72. "A Biomolecular Engineering Approach for Environmental Remediation and Sensing", Department of Chemical and Biological Engineering, Northwestern University, April 28, 2005.
73. "A Biomolecular Engineering Approach for Environmental Biotechnology", Department of Chemical Engineering, Rice University, February 3, 2005.
74. "A Biomolecular Engineering Approach for Environmental Biotechnology", Department of Chemical Engineering, University of Southern California, January 19, 2005.
75. "Biomolecular Approaches for Biosensing", Department of Chemistry, Analytical Chemistry Seminar, University of California, Riverside, May 24, 2004.
76. "A Biomolecular Engineering Approach for Environmental Remediation", Department of Bioengineering, University of Illinois, Urbana-Campaign, February 5, 2004.
77. "A Biomolecular Engineering Approach for Environmental Remediation", Department of Biochemistry, California State University, Fullerton, December 10, 2003.
78. "Nanoscale Biopolymers with Tunable Properties for Improved Decontamination and Recycle of Heavy Metals", EPA Science Forum, Washington D.C., May 7, 2003.
79. "A Biomolecular Engineering Approach for Environmental Remediation", Department of Chemical Engineering, University of Maryland, College Park, April 1, 2003.
80. "Nanoscale Biomaterials for Environmental and Biomedical Applications", Photosynthesis and Biomolecular Nanotechnology Seminar Series, Arizona State University, January 23, 2003.
81. "A Biomolecular Engineering Approach for Environmental Remediation", Department of Chemical Engineering, University of Nevada, Reno, September 27, 2002.

82. "A Biomolecular Engineering Approach for Environmental Remediation", Department of Chemical Engineering, University of Connecticut, September 10, 2002.
83. "A Biomolecular Engineering Approach for Environmental Remediation", Department of Chemical Engineering, Johns Hopkins University, March 28, 2002.
84. "Engineering Improved Microbes and Enzymes for Bioremediation", Environmental Toxicology Program, University of California, Riverside, March 14, 2001.
85. "Engineering Improved Microbes and Enzymes for Bioremediation", Biological Process Technology Institute, University of Minnesota, October 13, 2000.
86. "Engineering Improved Microbes and Enzymes for Bioremediation", Department of Chemical and Biochemical Engineering and Materials Science, University of California, Irvine, May 26, 2000.
87. "Engineering Improved Microbes and Enzymes for Bioremediation", Department of Civil Engineering, University of Southern California, October 29, 1999.
88. "High Efficiency Biodegradation of Organophosphate Nerve Agents using Novel Immobilized Biocatalysts", NATO Advance Study Institute, Enzymes in Heteroatom Chemistry: Green Solutions for Chemical Problems, Berg en Dal, Netherlands, June 19-30, 1999.
89. "Biodegradation of Organophosphorus Nerve Agents by Surface-Expressed Organophosphorus Hydrolase", NATO Advance Study Institute, Enzymes in Heteroatom Chemistry: Green Solutions for Chemical Problems, Berg en Dal, Netherlands, June 19-30, 1999.
90. "Engineering Improved Microbes and Enzymes for Bioremediation", Department of Biochemistry, California State University, Fullerton, May 18, 1999.
91. "Engineering Improved Microbes and Enzymes for Bioremediation", Department of Chemical Engineering, University of Notre Dame, March 31, 1999.
92. "Molecular Approaches to Environmental Biotechnology", Department of Chemical Engineering, Virginia Tech, June 22, 1998.
93. "Molecular Approaches to Environmental Biotechnology", Department of Chemical Engineering, Penn State University, April 2, 1998.
94. "Molecular Approaches to Environmental Biotechnology", Department of Chemical Engineering, University of Florida, March 30, 1998.
95. "Molecular Approaches to Environmental Biotechnology", Department of Chemical Engineering, North Carolina State University, January 5, 1998.

96. "Chemical Engineering of Cellular Processes", Department of Chemical Engineering, Texas A&M University, November 3, 1997.
97. "Engineering the Translational Apparatus of *E. coli* for Enhanced Recombinant Protein Synthesis During Restricted Growth", Genentech Inc., June 6, 1997.
98. "Improvement in Recombinant Protein Synthesis in Genetically-Engineered *E. coli* During Restricted Growth", Biotechnology Division, National Institute of Standard and Technology, October 28, 1996.
99. "Application of Metabolic Engineering to Bioprocessing and Biodegradation", Department of Chemical Engineering, Washington University, October 14, 1996.
100. "Tuning Biphenyl Dioxygenase for Enhanced PCB Degradation", Office of Naval Research Workshop on Biological Dehalogenation in Marine Sediments, Federation of American Societies for Experimental Biology, Bethesda, May 7, 1996.
101. "Application of Metabolic Engineering to Bioprocessing and Bioremediation", Department of Chemical Engineering, UCLA, March 15, 1996.

TEACHING EXPERIENCE

Instructor for courses in Cell Engineering, Process Control, Mass Transfer, Chemical Engineering Thermodynamics I and II, Mass and Energy Balance, Biochemical Engineering, Undergraduate Laboratory, and Heat Transfer

STUDENT ADVISING

Current Post-Doctoral Students

James Tang, 2022-Present

Current Graduate Students (major advisor or co-advisor) at Delaware (8)

Daniel Yur (Ph.D.), Chemical Engineering, with Prof. M. Sullivan, 2016-Present

Hopen Yang (Ph.D.), Chemical Engineering, 2017-Present

Antonio Goncalves (Ph.D.), Chemical Engineering, with Prof. M. Sullivan, 2019-Present

Madan Gopal (Ph.D.), Chemical Engineering, with Prof. A. Kunjapur, 2020-Present

Anthony Stohr (Ph.D.), Chemical Engineering, with Prof. M. Blenner, 2021-Present

Blake Richards (Ph.D.), Chemical Engineering, with Prof. M. Sullivan, 2021-Present

Kook Bum Kim (Ph.D.), Chemical Engineering, with Prof. A. Lenhoff, 2021-Present

Caitlin D'Ambrosio (Ph.D.), Chemical Engineering, with Profs. A. and C. Kloxin, 2021-Present

Former Ph.D. Students at UC Riverside (19)

Dr. Aijun Wang (Staff Toxicologist, Cal EPA), 2001, Co-advisor: Prof. A. Mulchandani

Dr. Mark Shimazu (Director - Upstream Process Development, Ambrx), 2002, Co-advisor: Prof. A. Mulchandani
Dr. Catherine Cho (Principal Scientist, Purissima), 2003, Co-advisor: Prof. A. Mulchandani
Dr. Jae-Young Kim (Samsung Research Center, Korea), 2004, Co-advisor: Prof. A. Mulchandani
Prof. Yu Lei (Centennial Professor, University of Connecticut), 2004, Co-advisor: Prof. A. Mulchandani
Dr. Kanchan Joshi (Principal Scientist, Radiometer) 2006, Co-advisor: Prof. A. Mulchandani
Dr. Cindy Wu, 2006, (Research Scientist Supervisor II at California Department of Public Health), Co-advisor: Prof. A. Mulchandani
Dr. U Loi (Anne) Lao (Associate Director, Upstream Process Development, Codexis), 2007, Co-advisor: Prof. A. Mulchandani
Dr. Yu-Chen Hwang (Imaging Software Product Manager, Molecular Devices), 2007, Co-advisor: Prof. M.V. Yates
Dr. Mangesh Banger (Advanced Materials), 2008, Co-advisor: Prof. A. Mulchandani and Myung
Dr. Seung Hyun Kang (Research Scientist, LG Life Sciences, Daejeon, Korea), 2008
Dr. Shailendra Singh (Executive Director, Bio-Pharmaceutical Process Development & Commercialization Leader, Merck), 2008
Dr. Joun Lee (Researcher, U Iowa), 2009, Co-advisor: Prof. A. Mulchandani and Myung
Dr. Maxwell Kum, (Engineer, ACON Laboratories, Inc.), 2009, Co-advisor: Prof. A. Mulchandani and Myung
Dr. Hsiao-Yun Yeh (Research Scientist, Van Andel Institute), 2010
Dr. Payal Biswas (Associate Director, Global Regulatory Affairs, Merck), 2010
Dr. Divya Sivaraman, (Research Scientist, Medhus Bio), 2011
Dr. Shen-Long Tsai (Professor, NTUST, Taiwan), 2011
Dr. Lakshmi Narasamamba Cella, (Associate Director, Biologics Upstream Process Development, BMS), 2012

Former Ph.D. Students at University of Delaware (15)

Dr. Fang Liu, (Senior Scientist, Predicine), 2012
Dr. Miso Park, (Assistant Research Professor, City of Hope), 2013
Dr. Daniel Blackstock (Senior Scientist, Generation Bio), 2014
Dr. Qing Sun (Assistant Professor, Texas A&M), 2015
Dr. Heejae Kim (Senior Scientist, CRISPR Therapeutics), Chemical Engineering, 2016
Dr. Qi Chen, Chemical Engineering, 2017
Dr. Andrew Swartz (Associate Principal Scientist, Merck), Chemical Engineering, 2018
Dr. Rebecca P. Chen (Senior Scientist, Pfizer), Chemical Engineering, 2018
Dr. Ka-Hei Siu (Postdoctoral Researcher, UC Berkeley), Chemical Engineering, 2018
Dr. Emily A. Berckman (Senior Scientist, Merck), Chemistry and Biochemistry, 2020
Dr. Andrew Gaynor (Senior Scientist Cell Therapy, AstraZeneca), Chemical Engineering, 2020
Dr. Emily J. Hartzell, (Postdoctoral Researcher, Tufts), 2020
Dr. Rachel Lieser, (Scientist I, Lycia Therapeutics), Co-advisor: Prof. M. Sullivan, 2021
Dr. Victoria Hunt, (Scientist, Taysha Gene Therapies), Co-advisor: Prof. K. Lee, 2021
Dr. Alexander Mitkas, (Scientist, Pfizer), 2021

Former M.S. Students at UC Riverside (8)

Ms. Grisselle Martinez (FDA Lab), M.S. 1999, Co-advisor: Prof. A. Mulchandani

Ms. Oymon Leong (USDA Lab), M.S. 2001, Co-advisor: Prof. M.V. Yates
Mr. Giri Prabhukumar (Krieger and Stewart Consulting), M.S. 2002, Co-advisor: Prof. A. Mulchandani
Mr. Alin Chen (Amgen), M.S. 2006, Co-advisor: Prof. A. Mulchandani
Ms. Nicole McBean (Boston Scientific), M.S. 2006, Co-advisor: Prof. A. Mulchandani
Ms. Garima Goyal, (Lawrence Berkeley National Laboratory), M.S. 2010
Ms. Garima Chaudhary, (Boehringer Ingelheim), M.S. 2011
Mr. Chun-Che Tseng, (Dow, Taiwan), M.S., 2010, Co-advisor: Prof. Jianzhong Wu

Former M.S. Students at Delaware (3)

Mr. Long Chen, Chemical Engineering, 2015
Ms. Lauren Dorsey, Chemical Engineering, 2017
Ms. Anxhela (Angela) Sinani, Chemical Engineering, 2021

Former Post-Doctoral Students (36)

Dr. Neilay Dedhia (Cold Spring Harbor Laboratory), 1995-1996
Dr. Richard D. Richins (New Mexico State University), 1995-1999
Dr. Fredi Bruhlman (Firmenich SA, Switzerland), 1996-1998
Dr. Irina Kaneva, 1996-1998
Dr. S. M. Zarook, 1996-1997
Dr. Nathalie Fortin (post-doc U Bath), 1997-1998
Dr. Weon Bae (Union Biometrica), 1997-2001
Dr. Jan Kostal (R & D System, Inc.), 1999-2003
Dr. Zhaohui Xu (Assistant Professor, Bowling Green State U.), 2000-2002
Dr. Michal Stibor, 2000-2002
Dr. Hanka Stiborova, 2000-2002
Dr. Marek Prouza, 2002-2004
Dr. Sergi Morais, 2001-2003
Dr. Di Gao, (Assistant Professor, U. Pittsburgh), 2004-2005
Dr. Kumaran Ramanathan, (Applied Biosystems) 2004-2005
Dr. Junehyung Kim, (Dong-A University, Korea), 2003-2005
Dr. Lianbin Xu, 2004-2007 (Assoc. Prof., Beijing Univ. of Chem. Technol.)
Dr. Zihui Meng, 2004-2006
Dr. Wonkyu Lee, 2004-2006
Dr. Gabriela Jenikova, 2004-2006 (UC San Deigo)
Dr. Debansu Chaudhuri, 2006-2008
Dr. Zdenek Chodora, 2006-2008
Dr. Chitradurgav Aravinda, 2006-2008
Dr. Jeong Seok Oh, 2007-2008
Dr. Dhammanand J. Shirale. 2008-2009
Dr. Priti Mulchandani, 1996-2010
Dr. Jose Jason Cantera, 2006-2010, Research Scientist at PATH
Dr. Chaokun Li, 2009-2010, Chief of Physiology & Neurobiology, Xinxiang Medical University, China
Dr. Mangesh Banger, 2008-2010, Advanced Materials
Dr. Bhawna Madan, 2010-2012, Assistant Professor at Amity University, India

Dr. Shen-Long Tsai, 2011-2012, Professor at National Taiwan University Science and Technology
Dr. Riquig Yu, 2014-2014, Assistant Professor, University of Texas, Tyler
Dr. Vince Prince, 2014-2016, Senior Scientist, Janssen Research & Development
Dr. Jeong Eun Hyeon, 2016-2016
Dr. Maryam Raeeszadeh-Sarmazdeh, Assistant Professor of Chemical Engineering, University of Nevada, Reno, 2014-2016
Dr. Mauricio Valverde, 2019-2020

SELECTED DEPARTMENT AND UNIVERSITY SERVICES

Delaware

Graduate Advisor, September 2013-2016, 2020-Present
Gore Chair Search Committee Chair, 2016-2017
Award Committee Chair, 2017-Present
Faculty Search Committee Chair, 2018-2019
Faculty Search Committee, 2019-2020
Faculty Search Committee, Biopharama Cluster Hiring, 2018-Present
Award Committee Chair, 2017-Present

UCR

Graduate Advisor, September 1998-2004, 2005-2008
Chair, Department Seminar Series, 1997, 1999, 2002, 2004, 2008
Chair, Faculty Search Committee, 1998, 2000, 2002, 2005, 2008
Member, University Planning and Budget Committee, 2004-2008
Member, Graduate Council, 2008-2009
UCR Primary Campus representative to the Research Council of UC BioStar Program

SELECTED PROFESSIONAL ACTIVITIES

Member

American Institute of Chemical Engineers
American Chemical Society
American Society of Microbiology

Reviewer

Journals

Analytical Chemistry
Antonie van Leeuwenhoek
Applied and Environmental Microbiology
Applied Microbiology and Biotechnology
Biocatalysis and Biotransformation
Biodegradation

Biomarcomolecules
Bioprocess Engineering
Bioresources Technology
Biosensors and Bioelectronics
Biotechnology and Bioengineering
Biotechnology Progress
Cell Biochemistry and Biophysics
Clinical Chemistry and Laboratory Medicine
Critical Reviews in Biotechnology
Electrophoresis
Electroanalysis
Environmental Science and Technology
Enzyme and Microbial Technology
FEMS Microbial Letters
Gene
Infection and Immunity
Journal of American Chemical Society
Journal of Applied Microbiology
Journal of Biotechnology
Journal of Chemical Technology and Biotechnology
Journal of Chromatography B
Journal of Hazardous Materials
Journal of Virological Methods
Langmuir
Macromolecules
Metabolic Engineering
Microbiology
Nature Biotechnology
Nature Protocols
Nano Letters
Protein Engineering
Protein Expression and Purification
Sensors & Actuators: B
Soil and Sediment Contamination: an International Journal
Small
Trends in Biotechnology
Water Research

Proposals

NSF
Petroleum Research Fund
USDA
Wellcome Trust
Catholic University, Leuven, Belgium
Florida Sea Grant

North Carolina Biotechnology Center
US Army Medical Research and Materiel Command
International Science and Technology Center
National Aeronautics and Space Administration (NASA) Experimental Program to Stimulate Competitive Research (EPSCoR) Program in South Carolina
Kentucky Science & Engineering Foundation
National Sciences and Engineering Research Council of Canada (NSERC)
National University of Singapore Academic Research Fund

Panelist

NSF Biotechnology Group Proposal Panel, Bioengineering Division,
May 29, 1997

EPA/NSF Panel for Technology for a Sustainable Environmental: Biological
Applications, May, 19, 1998

NSF Biotechnology POWRE/GROUP Proposal Panel, Bioengineering Division, June 8-
9, 2000

UC BioStar Panel, June 2, 2001

NSF Quantitative System Biotechnology Panel, Bioengineering Division, June 7-8, 2001

External Panelist, North Carolina Biotechnology Center, July 2000- 2003

External Panelist, Florida Sea Grant, July 2001

UC BioStar Panel, March 2, 2002

NSF Major Research Instrument Panel, Bioengineering Division, April 3-4, 2002

NSF Quantitative System Biotechnology Panel, Bioengineering Division, May 23-24,
2002

EPA Panel on Environmental Futures Research in Nanoscale Science, Engineering, and
Technology, Oct 22-23, 2002.

UC BioStar Panel, Nov 25, 2002

NSF Major Research Instrument Panel, Bioengineering Division, April 7, 2003

NSF Technology for a Sustainable Environmental Panel, Bioengineering Division, May
8-9, 2003

NSF Major Research Instrument Panel, Bioengineering Division, May 3-4, 2004.

NSF Sensors and Sensor Networks Panel, Bioengineering Division, June 10, 2004.

NSF Biotechnology GROUP Proposal Panel, Bioengineering Division, March 31-April 1, 2005.

NSF Sensors and Sensor Networks Panel, Bioengineering Division, June 7, 2005.

NIH R21 grant study section for biofilm/microbiology and periodontal disease, July 18, 2005

NIH R21 grant study section for biofilm/microbiology and periodontal disease, November 14, 2005

USDA Air, Water, and Soil SBIR Panel, February 9-10, 2006

UC BioStar Panel, March 1, 2006

Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET) Review Panel, University of New Hampshire, April 26, 2006

Strategic Environmental Research and Development (SERDP) Program Review Panel for Identification of biomarkers to assess groundwater contaminant degradative potential of a microbial population, May 8, 2006

NSF Career Proposal Panel, Bioengineering Division, November 8-9, 2006

EPA Star Fellowship Panel for Microbiology, March 6-7, 2007

NSF NIRT Panel, Catalysis and Biocatalysis, March 13-14, 2007

NSF Biotechnology/Biochemical Engineering Panel, May 17-18, 2007

NSF Career Proposal Panel, Bioengineering Division, November 13-14, 2007

NSF Biotechnology/Biochemical Engineering Panel, June 9-10, 2008

NIH Special Emphasis Panel for Nanotechnology for Bioremediation, June 11, 2008

NSF Metabolic Biochemistry Panel, October 27-29, 2008

NSF Bioseparation Panel, April 23-24, 2009

NSF Biotechnology/Biochemical Engineering Panel, June 16-17, 2009

NSF Biotechnology/Biochemical Engineering Panel, May 25-26, 2010

DOE's Genomics Sciences Biofuels Panel, December 8 - 10, 2010

NSF Biotechnology/Biochemical Engineering Panel, May 20, 2011

NSF Biotechnology Career Panel, November, 2012

NSF MCB/BBE Career Panel, October, 2013

NSF Catalysis and Biocatalysis Career Panel, December, 2013

NSF Catalysis and Biocatalysis Panel, April, 2014

NSF MCB/BBE Career Panel, September, 2014

NSF Catalysis and Biocatalysis Panel, April, 2015

NSF MCB/BBE Career Panel, September, 2015

NSF MCB/BBE Career Panel, September, 2016

NSF MCB/BBE Career Panel, September, 2017

NSF MCB/BBE Career Panel, September, 2018

NSF CBE Career Panel, September, 2019

Program Chair

BIOT Program Chair, 2007 ACS Fall Meeting, Boston

Biochemical and Biomolecular Engineering Conference XX, 2017, Newport Beach,

Session Chair or Co-Chair

Poster Session, Biochemical Technology Division, American Chemical Society 1998 Fall meeting, Boston, MA.

“Recent Developments in Microbial Expression Systems”,
Biochemical Technology Division, American Chemical Society
1998 Fall meeting, Boston, MA.

“Molecular Approaches for Environmental Biotechnology”, Biochemical
Technology Division, American Chemical Society 1999 Spring meeting,
Anaheim, CA.

Poster Session, Engineering Foundation's Enzyme Engineering XV conference, October, 1999, Kona, Hawaii.

"Advances in Environmental Biotechnology", American Institute of Chemical Engineers 1999 National Meeting, Dallas, TX.

"Environmental Biotechnology", Biochemical Technology Division, American Chemical Society 2000 Spring meeting, San Francisco, CA.

"Advances in Biocatalysis", Biochemical Technology Division, American Chemical Society 2001 Spring meeting, San Diego, CA.

"Environmental Biotechnology", Engineering Foundation's Biochemical Engineering XII Conference, July, 2001, Sonoma, CA.

"Advances in Biocatalysis", American Institute of Chemical Engineers 2001 National Meeting, Reno, NV.

"Nanoscale Sensing Technology: Why and How?", American Chemical Society 2003, Spring meeting, New Orleans, LO.

"BIOT Poster Session", American Chemical Society 2005, Spring meeting, San Deigo, CA.

"Poster Session", Biochemical Engineering XIV Conference, July, 2005, British Colombia, Canada.

"Topical Sensors: Environmental Sensors", American Institute of Chemical Engineers 2005 National Meeting, Cincinnati, OH.

"Topical Sensors: Advances in Biosensors III", American Institute of Chemical Engineers 2005 National Meeting, Cincinnati, OH.

"Fundamentals of Environmental Biotechnology", American Institute of Chemical Engineers 2007 National Meeting, Salt Lake City, UT.

"Fundamentals of Environmental Biotechnology", American Institute of Chemical Engineers 2008 National Meeting, Philadelphia, PA.

CONFERENCE PRESENTATIONS

1. Madan Gopal, Roman Dickey, Neil Butler, Michael Talley, Mary Watson, **Wilfred Chen** and Aditya Kunjapur, Reductive Enzyme Cascades for Valorization of PET Depolymerization Products Guided By the Specificity of Carboxylic Acid Reductases, SEED Meeting, May 2022.

2. Hopen Yang and **Wilfred Chen**, Developing a Highly Specific, Modular Platform for Conditional Protein Degradation, ACS Annual Meeting, San Diego, March 2022.
3. Hopen Yang and **Wilfred Chen**, Developing a Highly Specific, Modular Platform for Conditional Protein Degradation, AIChE Annual Meeting, November 2021.
4. Anhuy Pham, Nancy DaSilva, and **Wilfred Chen**, Dynamic Assembly of Cas6-Mediated RNA Scaffold for Colocalization of Enzymes in *Saccharomyces cerevisiae*, AIChE Annual Meeting, November 2021.
5. **Wilfred Chen**, Programming STAND Displacement Circuits for Dynamic Protein Assembly and Biosensing, AIChE Annual Meeting, November 2021.
6. Alex Mitkas and **Wilfred Chen**, Spatiotemporal Control of Protein Localization and Intracellular Metabolic Flux with an RNA Based, High Affinity, Dynamic Scaffold, AIChE Annual Meeting, November 2020.
7. **Wilfred Chen**, New synthetic biology tools for dynamic modulation of cellular phenotypes, Biochemical Engineering XXI, Mont Tremblant, Quebec, Canada, July, 2019
8. Andrew Swartz and **Wilfred Chen** Rapid detection of monoclonal antibodies and other biomolecules through functionalized nanoparticle crosslinking, ACS Annual Meeting, Orlando, March 2019.
9. Emily Berckman and **Wilfred Chen**, Designing modular synthetic metabolons via dCas9-guided assembly, ACS Annual Meeting, Orlando, March 2019.
10. Alex Mitkas and **Wilfred Chen**, Developing a high affinity, dynamic scaffold toolkit for intracellular spatial organization of proteins, ACS Annual Meeting, Orlando, March 2019.
11. Daniel Yur, Millicent O. Sullivan, and **Wilfred Chen**, Targeted siRNA delivery with modular hepatitis B virus-like particles, ACS Annual Meeting, Orlando, March 2019.
12. Victoria M. Hunt, Kelvin H. Lee, and **Wilfred Chen**, Development of a RNA-sensing spatiotemporal gene regulation program for mammalian systems, ACS Annual Meeting, Orlando, March 2019.
13. Emily Hartzell, Justin Terr and **Wilfred Chen**, Engineering a blue light inducible spycatcher system (BLISS) as a tool for protein photopatterning and optogenetics, ACS Annual Meeting, Orlando, March 2019.
14. Victoria M. Hunt, Kelvin H. Lee, and **Wilfred Chen**, Development of a Novel RNA-Sensing Spatiotemporal Gene Regulation Program for Eukaryotic Systems, AIChE Annual Meeting, Pittsburgh, October 2018.

15. Alex Mitkas and **Wilfred Chen**, Developing a High Affinity, Dynamic Scaffold Toolkit for Intracellular Spatial Organization of Proteins, AICHE Annual Meeting, Pittsburgh, October 2018.
16. Emily Hartzell, Justin Terr and **Wilfred Chen**, Engineering a Blue Light Inducible Spycatcher System (BLISS) As a Tool for the in Vitro Photo-Patterning of Proteins and Optically Controlled Intracellular Protein Activity, AICHE Annual Meeting, Pittsburgh, October 2018.
17. **Wilfred Chen**, Engineering Nanoscale Protein Scaffolds with Modular Functionalities, AICHE Annual Meeting, Pittsburgh, October 2018.
18. Yikun Huang, Andre Beringhs, Qi Chen, Mu-Ping Nieh, Xiuling Lu, Tai-Hsi Fan, **Wilfred Chen** and Yu Lei, Biocompatible Genetically-Engineered Outer Membrane Vesicles with Expressed Nanoluc Reporter: Preparation, Characterization and In Vivo Kinetic Modeling, AICHE Annual Meeting, Pittsburgh, October 2018.
19. Emily Hartzell, Justin Terr, and **Wilfred Chen**, Engineering a blue light inducible SpyCatcher system (BLISS) for in vitro photopatterning of proteins and optically controlled protein rescue, ACS Annual Meeting, New Orleans, March 2018.
20. Andrew Gaynor and **Wilfred Chen**, Tunable, post-translational method for controlling prodrug converting enzymes in cancer cells, ACS Annual Meeting, New Orleans, March 2018.
21. Emily Hartzell and **Wilfred Chen**, Hepatitis B viral-like particles as protein delivery vehicles for targeted therapy and genome editing, ACS Annual Meeting, New Orleans, March 2018.
22. Andrew Swartz, Xuankuo Xu, Steven J. Traylor, Zheng Jian Li, and **Wilfred Chen**, One-step affinity capture and precipitation for enhanced purification of mAbs and Fc-fusion proteins using Z-ELP functionalized nanocages, ACS Annual Meeting, New Orleans, March 2018.
23. Rachel Lieser, Millicent O. Sullivan, and **Wilfred Chen**, Controlled EGFR ligand display on cancer suicide enzymes for targeted intracellular delivery, ACS Annual Meeting, New Orleans, March 2018.
24. Emily Berckman and **Wilfred Chen**, Designing synthetic metabolons via dCas9-guided assembly, ACS Annual Meeting, New Orleans, March 2018.
25. **Wilfred Chen**, Engineering Biomolecular Scaffolds for Enhanced Biocatalysis, Advanced in Biocatalysis, Invited Keynote, AICHE Annual Meeting, Minneapolis, October 2017.
26. Heejae Kim, Andrew Gaynor, and **Wilfred Chen**, Modulating Antibody/Antigen Affinity By Triggered Assembly and Disassembly of an Artificially Split Protein M, AICHE Annual Meeting, Minneapolis, October 2017.
27. Emily Hartzell and **Wilfred Chen**, Engineering Hepatitis B Viral-like Particles into Protein Delivery Vehicles, AICHE Annual Meeting, Minneapolis, October 2017.

28. Ka-Hei Siu and **Wilfred Chen**, Programmable control of CRISPR-Cas9 systems by engineering sgRNA as toehold-switchable riboregulators, AICHE Annual Meeting, Minneapolis, October 2017.
29. **Wilfred Chen**, Building complex protein functions at the intersection of nanofabrication and synthetic biology, Marvin J. Johnson Award Lecture, ACS Annual Meeting, San Francisco, March 2017.
30. Claire Komives and **Wilfred Chen**, Snake antivenom peptide production using elastin-like peptide tag, ACS Annual Meeting, San Francisco, March 2017.
31. Lauren Dorsey and **Wilfred Chen**, MicroRNA-Triggered dCas9 binding to a molecular beacon for cancer detection, ACS Annual Meeting, San Francisco, March 2017.
32. Ka-Hei Siu and **Wilfred Chen**, Programmable control of CRISPR-Cas9 systems by engineering sgRNA as toehold-switchable riboregulators, ACS Annual Meeting, San Francisco, March 2017.
33. Andrew Gaynor and **Wilfred Chen**, Controlled protein degradation for the conditional survival of cancer suicide enzymes, ACS Annual Meeting, San Francisco, March 2017.
34. Rebecca Chen and **Wilfred Chen**, rodrug activation controlled by Boolean logic-gated nucleic acid strand displacement inside live cancer cells, ACS Annual Meeting, San Francisco, March 2017.
35. Emily Hartzell and **Wilfred Chen**, Bio-Click Chemistry for Modular Modification of Hepatitis B Viral-like-Particles As a Biosensor Platform for Cancer Detection, AICHE Annual Meeting, San Francisco, November 2016.
36. Maryam Raeeszadeh Sarmazdeh, Jacqueline Gonzalez and **Wilfred Chen** Engineering Methanogenesis Pathway of Methanogenic Archaea for Biofuel Production, AICHE Annual Meeting, San Francisco, November 2016.
37. Andrew Swartz and **Wilfred Chen**, Development of an affinity precipitation process using protein nanocages as a non-chromatographic alternative to platform therapeutic antibody purification, ACS Annual Meeting, San Deigo, March 2016.
38. Rebecca Chen and **Wilfred Chen**, Switchable protein sensors and enzyme reactions based on dynamic DNA assembly, ACS Annual Meeting, San Deigo, March 2016.
39. Qing Sun and **Wilfred Chen**, HaloTag mediated artificial cellulosome assembly on DNA template for efficient cellulose hydrolysis, ACS Annual Meeting, San Deigo, March 2016.
40. J. Vincent Price, Long Chen and **Wilfred Chen**, Enzymatic Assembly for Increased Methanol Utilization, ACS Annual Meeting, San Deigo, March 2016.

41. Maryam Raeeszadeh Sarmazdeh and **Wilfred Chen**, Engineering anaerobic methanogenic pathway and methyl-coenzyme M reductase in *Methanosarcina acetivorans*, ACS Annual Meeting, San Deigo, March 2016.
42. Ka-Hei Siu and **Wilfred Chen**, Synthetic extracellular sensing circuit by intein-mediated reconstitution of yeast mating factor, ACS Annual Meeting, San Deigo, March 2016.
43. **Wilfred Chen**, Adding Logic to Complex Protein Functions, Daniel I.C. Wang Award Lecture, AIChE Annual Meeting, Salt Lake City, November 2015.
44. **Wilfred Chen**, Engineering Nanoscale Protein Scaffolds with Modular Functionalities, Bionanotechnology Plenary Lecture, AIChE Annual Meeting, Salt Lake City, November 2015.
45. J. Vincent Price, Long Chen and **Wilfred Chen**, Enzymatic Assembly for Increased Methanol Utilization, AIChE Annual Meeting, Salt Lake City, November 2015.
46. Ka-Hei Siu and **Wilfred Chen**, Synthetic Extracellular Sensing Circuit By Intein-Mediated Reconstitution of Yeast Mating Facto, AIChE Annual Meeting, Salt Lake City, November 2015.
47. Rebecca Chen and **Wilfred Chen**, DNA Aptamer Switch for Enzymatic Prodrug Activation Against Cancer, AIChE Annual Meeting, Salt Lake City, November 2015.
48. **Wilfred Chen**, Switchable protein sensors and therapeutics based on dynamic DNA assembly, Biochemical Engineering XIX, Puerto Vallarta, Mexico, July, 2015
49. Rebecca Chen and **Wilfred Chen**, DNA strand displacement induced prodrug activation for cancer treatment, ACS Annual Meeting, Denver, March 2015.
50. Ka-Hei Siu and **Wilfred Chen**, Transcriptional activation of yeast by split intein-mediated reconstitution of synthetic peptide signals, ACS Annual Meeting, Denver, March 2015.
51. Daniel Blackstock and **Wilfred Chen**, Organization of Enzyme Proximity Controlled By Strand Displacement, AIChE Annual Meeting, Altanta, November 2014.
52. Qing Sun, Qi Chen, Szu-Wen Wang and **Wilfred Chen**, Post-Translational Modifications of Protein-Nanocages as a Universal Biosensor Platform, AIChE Annual Meeting, Altanta, November 2014.
53. Daniel Blackstock and **Wilfred Chen**, New class of protein labeled molecular beacons, ACS Annual Meeting, Dallas, March 2014.
54. Qi Chen, Qing Sun, Szu-Wen Wang, and **Wilfred Chen**, Engineering 3D protein scaffolds for biocatalysts assembly, ACS Annual Meeting, Dallas, March 2014.

55. Qing Sun, Qi Chen, Szu-Wen Wang, and **Wilfred Chen**, Post-translational modifications of protein-nanocages as a universal biosensor platform, ACS Annual Meeting, Dallas, March 2014.
56. Rebecca P Chen, Miso Park, Vlasta Dudkova, and **Wilfred Chen**, Development of a highly sensitive split protein based whole-cell bioassay to detect estrogenic compounds, ACS Annual Meeting, Dallas, March 2014.
57. Daniel Blackstock and **Wilfred Chen**, New Molecular Probes for mRNA Detection, AICHE Annual Meeting, San Francisco, November 2013.
58. Sneha Srikrishnan, **Wilfred Chen** and Nancy A. Da Silva, Characterization of Modular Designer Xylanosomes for Enhanced Hemicellulose Hydrolysis in Yeast, AICHE Annual Meeting, San Francisco, November 2013.
59. Heejae Kim and **Wilfred Chen**, Engineering Glucose Oxidase to Improve Electron Transport in Enzymatic Fuel Cells, AICHE Annual Meeting, San Francisco, November 2013.
60. Qi Chen, Qing Sun, Szu-Wen Wang, and **Wilfred Chen**, Engineering 3-Dimensional Protein Scaffolds for Biocatalysts Assembly, AICHE Annual Meeting, San Francisco, November 2013.
61. Miso Park, Qing Sun, Fang Liu, Matthew P DeLisa, and **Wilfred Chen**, Positional assembly of enzymes in bacterial outside member vesicles for cascade reactions, ACS Annual Meeting, New Orleans, March 2013.
62. Fang Liu and **Wilfred Chen**, Engineering a high-affinity and recyclable scaffold for protein purification, ACS Annual Meeting, New Orleans, March 2013.
63. Heejae Kim and **Wilfred Chen**, Engineering glucose oxidase to enhance electron transport in enzymatic fuel cells, ACS Annual Meeting, New Orleans, March 2013.
64. Daniel Blackstock and **Wilfred Chen**, New molecular probes for disease-specific mRNA detection, ACS Annual Meeting, New Orleans, March 2013.
65. Rahul Dinesh Sheth, Jia Liu, Mi Jin, Zhengjian Li, **Wilfred Chen**, Steven M Cramer, Purification of monoclonal antibodies using ELP smart biopolymer based affinity precipitation system: HTS and scale-up studies, ACS Annual Meeting, New Orleans, March 2013.
66. Fang Liu, Scott A. Banta and **Wilfred Chen**, Assembly of Multi-Enzyme Cascades Using Synthetic Scaffoldins Displayed On the Yeast Surface, AICHE Annual Meeting, Pittsburg, October 2012.

67. Lakshmi N Cella, Marylynn V. Yates, Ashok Mulchandani, and **Wilfred Chen**, Quantitative Assessment of in Vivo HIV Protease Activity Using Genetically Engineered QD-Based FRET Probes, AICHE Annual Meeting, Pittsburg, October 2012.
68. Qing Sun, Shen-Long Tsai, Bhawna Madan and **Wilfred Chen**, Functional Self-Assembly of Artificial Cellulosomes for Efficient Cellulose Hydrolysis, AICHE Annual Meeting, Pittsburgh, October 2012.
69. Rahul D. Sheth, Bhawna Madan, **Wilfred Chen**, and Steven M. Cramer, Purification of Monoclonal Antibodies by Affinity Precipitation Using Thermally Responsive Elastin-Like Polypeptides(ELPs) Fused to IgG Binding Domains: High Throughput Analysis and Scale up Considerations, AICHE Annual Meeting, Pittsburg, October 2012.
70. Fang Liu and **Wilfred Chen**, Engineering high-Affinity Scaffolds for Protein Purification, ACS Annual Meeting, San Diego, March 2012.
71. Shen-Long Tsai, Qing Sun, **Wilfred Chen**, Artificial cellulosomes for enhanced biomass processing, ACS Annual Meeting, San Diego, March 2012.
72. Rahul D Sheth, Bhawna Madan, **Wilfred Chen**, Steven M Cramer, Purification of monoclonal antibodies by affinity precipitation using thermally responsive elastin-like polypeptides(ELPs) fused to IgG binding domains: High-throughput analysis and scale up considerations, ACS Annual Meeting, San Diego, March 2012.
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