Bi-min Zhang Newby

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The University of Akron, Akron, OH 44325-3906
Adjunct Professor, Department of Integrated Medicine,
Northeast Ohio Medical School, Rootstown, OH
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Maureen E. Cheung	08/2008 ï 08/2010	MS	Summa Health System, Akron, OH ï Residence
Yangjun Cai	08/2006 ï 12/2009	PhD	Bloo Solar, Sacramento, CA ï Imprint Chemist
Akhila Raya	08/2007 ï 12/2009	MS	Shire, Westlake Village, CA ï Principal Engineer
Feng Song	08/2002 ï 05/2007	PhD	Ashland Specialty Ingredients, NJ/DE ï Senior Staff Scientist
Abdulhadi A. Al-Juhni	08/2001 ï 08/2007	PhD	King Fahd University of Petroleum and Minerals, Saudi Arabia ï Associate Professor
Sung-Hwan Choi	08/2000 ï 05/2006	PhD	IHN Laboratories, Inc, South Korea ï CEO
Lifang (Lisa) Wang			

Heather Fairbairn[#]	08/2015 ï 05/2016	Thermal responsive drug delivery systems
Dounsavanh Letdara[#]	08/2015 ï 05/2016	Polyelectrolyte complex delivery systems
Ryan Loftus[#]	08/2015 ï 05/2016	Alginate microbeads via an air assisted shearing process
Gregg Butala Jr	01/2016 ï 05/2016	Cellular behaviors on silanied surfaces
Camila Teles Garcia*	05/2015 ï 07/2015	Corrosion of aluminum by fungi
Dan Peters[#]	08/2014 ï 05/2015	Polymeric micro-tubes
Abdullah Alghunaim	01/2014 ï 05/2014	Marangoni cleaning and thermoresposive surfaces
Jamie Whyte[#]	08/2013 ï 05/2014	Controlled release from hydrogels
Renea Horn**	08/2013 ï 05/2014	Drug release from hydrogels
Lauren Kukwa	09/2012 ï 12/2012	Drug release from hydrogels
David Ratino	06/2012 ï 05/2013	Bacterial and fungal induced corrosion
Sean Dilion[#]	08/2011 ï 05/2013	Multicomponent distillation of aromatic compounds
Mike Pienoski	08/2011 ï 12/2011	Multicomponent distillation of aromatic compounds
Kevin Cameron[#]	08/2011 ï 05/2012	Cell sheet engineering
John Cavicchia**	05/2011 ï 05/2012	Thermoresponsive polymers and cell sheet engineering
Xin He	08/2008 ï 05/2012	Antifouling, microbiologically influenced corrosion
Michael Lembono[#]	08/2011 ï 05/2012	Polymer blend thin films
Tanya Miracle[#]	06/2011 ï 05/2012	Superhydrophobic coatings for corrosion prevention
Keith Dick	08/2011 ï 12/2011	Properties of poly(*N*-isopropylacrylamide)

		(WRA), Hudson, OH	in Engineering
Wanxin Zhang		Westview, San Diego, CA	
Wanxin Zhang	2013, 2014	Westview, San Diego, CA	NIH AREA (HS outreach)
Tony X. Pan	2013	Lynbrook, San Jose, CA	
Andrew Quinn	2013	Hoover, Canton, OH	Corrosion Research Academy
Quinn Gilbert		Firestone, Akron, OH	
Lisa Blumenthal	2012	Laurel School, Shaker Heights, OH	NIH AREA (HS outreach)
David Ma		WRA, Hudson, OH	
Bryce Mitchell	2010	Firestone, Akron, OH	Project-Lead-the Way
Nicholas Kienzle			
Louis Ray	2010	Firestone, Akron, OH	Project-Lead-the Way
Abigail Freitag			
Xiao (Amy) Gao	2010	Firestone, Akron, OH	ACS Project SEED
Abigail Freitag	2009	Firestone, Akron, OH	Project-Lead-the Way
James Ray			
Donella Oliver	2008	Buchtel, Akron, OH	Upward Bound
Holly Beach	2008	Buchtel, Akron, OH	ACS Project SEED
Bruce Perry	2006, 2007	Firestone, Akron, OH	Project-Lead-the Way
Shammas Malik			
Joanna Price	2013	St Vince & St Mary High School, Akron, OH	NSF-RET
Joshua Odom	2012	East High School, Akron, OH	NSF-RET

International visiting scholars (3)

Name	Period	Home Institute	Project
Sirilak Phomrak	06/2019 ï present	Chulalongkorn University, Bangkok, Thailand	Stimuli responsive natural rubber-bacterial cellulose composites
Pamela Pasetto	05/2012 ï 08/2012	Université de Maine, Le Mans, France	Antifouling of coatings from recycled rubber
Suchata Kirdponpattara	08/2012 ï 09/2013	Chulalongkorn University, Bangkok, Thailand	Wettability of porous medium

Journal publications (out of 50) with undergraduates as the first author (3) or a co-author (8)

52. A Hoyt, S Li, X Dai, C Garcia, H Cong*, B-m Zhang Newby*, ***Corros. Eng. Sci. Technol.***, 53(6), 413-421, 2018.

49. A Alghunaim, E

Bi-

14. Q. W. Xu, C. A. Barrios, T. J. Cutright, B.-m. Zhang Newby[#], ñEvaluation of toxicity of capsaicin and zosteric acid and their potential application as antifoulants, ***Environ. Toxicol.*** 20(5), 467-474, 2005.

13. Q. W. Xu, C. A. Barrios, T. J. Cutright, B.-m. Zhang Newby[#], ñAssessment of antifouling effectiveness of two NPAs by attachment study with freshwater bacteriaò, ***ESPR*** 12(5), 278-284, 2005.

11. L.-f. Wang, G.-y. Zhu, P. Wang, B.-m. Zhang Newby[*], ñSelf-assembling of polymer-enzyme conjugates at oil/water interfacesò, ***Biotechnol. Progress*** 21, 1321-1328, 2005.

10. C. A. Barrios, Q. W. Xu. T. J. Cutright, B.-m. Zhang Newby[*], ñIncorporating zosteric acid into silicone coatings to achieve its slow

Other Refereed Publications

3. H. Wang, L.K. Ju, H. Castaneda-Lopez, G. Cheng, B.-m. Zhang Newby*, ñCorrosion of carbon steel C1010 and stainless steel 304 in the presence of iron oxidizing bacteria *Acidithiobacillus ferrooxidans*ò, ***Corrosion*** 2015, NACE Technical paper (Paper ID C2015-6060).
2. H. Wang, M. S. Sodagari, Y. Chen, Q. Tang, X. Shan, J. Payer, L.-K. Ju, G. Cheng, B.-m. Zhang Newby* ñDeveloping flow system for monitoring initial stages of biofilm formation on microbiologically induced corrosionò, ***2011 DOD Corrosion Conference*** Technical paper (Paper ID 20574).
1. K. Moorthy, B.-m. Newby, G. G. Chase, ñEffect of surface energy of fibers on coalescence fuel filtrationò, ***Exploration & Production: The Oil & Gas Review***, issue 2, 2007.

Patents

4. Abdullah Alghunaim, Bi-min Zhang Newby, ñThermoresponsive cell culture supportsò, ***US Patent App.*** 16/239,671, 2019.
3. Bi-min Newby, Nikul Patel, John Cavicchia, Ge Zhang, ñThermo-responsive cell culture supportsò, ***US Patent App.*** 15/499,964, 2017.
2. Abdullah Alghunaim, Bi-min Zhang Newby, ñThermoresponsive cell culture supportsò, ***US Patent App.*** 15/458,254, 2017.
1. Bi-min Newby, Nikul Patel, John Cavicchia, Ge Zhang, ñThermo-responsive cell culture supportsò, ***US9701939***.

Conference Proceedings

22. S. Kirdponpattara, B.-m. Zhang Newby, M. Phisalaphong, ñEffect of oxygen plasma treatment on bacterial cellulose-alginate composite sponge as a yeast cell carrier for ethanol fermentationò, ***Advanced Materials Research*** 724-725: 1150-1153, 2013 (DOI: 10.4028/www.scientific.net/AMR.724-725.1150).
21. B.-m. Zhang Newby, Y.j. Cai, ñFracture induced creation of parallel silicone stripsò, ***Polymer Preprints***, 239th ACS meeting, 2010.
20. A. Jagtiani, J. Zhe, B.-m. Zhang Newby, ñSimultaneous detection of multiple bioparticles with a high throughput resistive pulse sensorò, Paper No. IMECE2006-15565, ***Micro-electro mechanical systems Division, MEMS***, American Society of Mechanical Engineers, 2006, pp. 551-555. (From: ASME 2006 International Mechanical Engineering Congress and Exposition)
19. B.-m. Zhang Newby, Y. Cai, F. Song, S.-H. Choi, ñGenerating step-wise gradient surfaces as combinatory tools for investigating adhesion phenomenaò, the ***Proceedings of the 29th Annual Meeting of the Adhesion Society***, 2006.
18. A. Al-Juhni, B.-m. Zhang Newby, ñBulk entrapment of less toxic antifouling compounds into silicone coatings to evaluate their release: experimental studies and mathematical modelingò, ***Smart Coating 2006 Symposium***, 2006.

17. A. Al-Juhni, B.-m. Zhang Newby, ñIncorporation of sodium benzoate into silicone coatings: An Environmental Friendly Way to Resolve Biofouling Problemsò, the ***Proceedings of the 28th Annual Meeting of the Adhesion Society***, 2005.

16. S.-H. Choi, B.-m. Zhang Newby, ñAdhesion enhancement of amino-functional organosilane for polystyrene thin f

2. H. R. Brown, M. K. Chaudhury, B.-m. Zhang Newby, ñEffects of segment mobility on slip and adhesionò, ***Polymer Preprints***, 37(2), 1996.
1. M. K. Chaudhury, B.-m. Zhang Newby, ñA direct observation of hydrodynamic slip at an adhesive-substrate interfaceò, ***Polymeric Materials: Science and Engineering***, 75, 1996.

Presentations (out of ~ 100) with undergraduates as *presenters (11)* or co-authors (10)

45th Middle Atlantic Regional Meeting of the American Chemical Society, Hershey, PA (June 4 ï 6, 2017)

1). *Moser J*, Alghunaim A, Zhang Newby B-m (Paper MARM 89) ï Effects of Hofmeister ions on particle attachment to surfaces.

2). *Newby E*, Alghunaim A, Brink E, Zhang Newby B-m (Paper MARM 90) ï Surface immobilization of poly(N-isopropylacrylamide) using silane coupling agents.

3). *Brink E*, Alghunaim A, Zhang Newby B-m (Paper MARM 91) ï Surface immobilization of poly(N-isopropylacrylamide) on polycarbonate.

4). *Benekos Z*, *Hussein A*, Zhang Newby B-m (Paper MARM 92) ï Mechanically strong protein-based hydrogels from suckerins of the squid ring teeth.

Industry advisory board meeting for Chemical Engineering at the University of Akron (April 29, 2016)

1). *Fairbairn H*, *Brink E*, Letdara D, Zhang Newby B-1

1). Wang H, Sodagari M, Chen Y, He X, Zhang Newby B-m, Ju LK, (Paper ID: 20581) ï Initial bacterial attachment in slow flowing systems: the effects of substrate surface hydrophobicity

2). Sodagari M, Wang H, Chen Y, He X, Zhang Newby B-m, Ju LK, (Paper ID: 20586) ï Reduction in initial attachment of *Pseudomonas aeruginosa*, *Pseudomonas putida* and *Escherichia coli* by rhamnolipids

2010 Metal Protection through Coatings Technology Conference, Pittsburg, PA (October 19 ï 20, 2010)

1). Miracle TA, Zhang Newby B-m ï Creating superhydrophobic coatings on aluminum and steel for corrosion prevention

2010 CUGSR (The University of Akron, April 08, 2010)

1). Wang H, Sodagari M, He X, Zhang Newby B-m, Ju LK, (Poster I ï 32) ï Effects of solid surface hydrophobicity on initial bacterial attachment under slow flow

2). *Miracle T*, Zhang Newby B-m, (Poster II ï 35) ï Super-hydrophobic surface creation on stainless steel using fluorocarbon based organosilane coatings for corrosion prevention

239th National Meeting of the American Chemical Society, San Francisco, CA (March 21 ï 25, 2010)

1). *Miracle T*, Zhang Newby B-m (COLL 211) ï Modification of aluminum using organosilane coatings to impede corrosion

2009 CUGSR (The University of Akron, March 26, 2009)

1). *Gessner R*, Cai Y-J, Zhang Newby B-m ï Simple and cost-effective non-lithography based stamp fabrication for protein patterning

Funding (~M$1.53)

The externally funded proposals (total ~ $M1.43 with ***$831,543*** to my credit) are summarized in the table below. (The % indicated is the % credits to me on that project as indicated on the routing/IDC forms.)

Title	PI	CoPI	Agency	Amount ($)	Awarded date
Affordable Thermo-responsive Cell Culture Supports for Damage Free Cell Harvesting	X		NSF (I-Corps team)	50,000	June, 2018
Thermo-responsive cell culture supports	X		NSF (I-Corps site)	2,500	May, 2016
Microbiologically influenced stainless steel corrosion (PI: Ju; other co-PIs: Cheng and Castaneda)	Ju				

(Note: ChEGSO ï chemical engineering graduate student organization; ABET - Accreditation Board for Engineering and Technology; IAB ï industry advisory board; CBE ï chemical and biomolecular engineering; ACS ï American Chemical Society; NIH ï National Institutes of Health; AREA ï Academic Research Enhanced Award; RTP ï Reappointment, Tenure & Promotion; ECE ï electrical and computer engineering; NCERCAMP ï National Center for Education and Research on Corrosion and Materials Performance; IACUC ï The Institutional Animal Care and Use Committee)

Local

Program Chair for the Akron Polymer Lecture Group (APLG), 2003-2004

Executive committee member for the Akron Polymer Lecture Group (APLG), 2003-2005

Judging posters in local schoolsô science fairs

Volunteered as a coach for the Hudson (OH) Highschool Science Olympia team (2011-2015)

Served as a member on the organizing committee for the Hudson (OH) ñParade of Bandsò (2012, 2013, 2014)

Collaborated with the National Inventors Hall of Fame on activities to promote youngstersô interests in science and engineering (2001- 2008)

National

Section chair (Polymer Thin Films) for the American Physical Society Meeting, Montreal, Canada, March 2004

Section chair (Surface Chemistry) for the Adhesion Society Meeting, Wilmington, NC, February 2004

Proposal reviewer for NSF (CTS division, DMR division) and PRF

Panel reviewer for NSF-CTS and NSF-STC (SBIR/STTR)

Manuscript reviewer for numerous ñWeb of Scienceò indexed journals including but not limited to ACS Sustainable Chemistry & Engineering, Advanced Functional Materials, Biofouling, Biomacromolecules, Biotechnology, Biotechnology Advances, Chemistry of Materials, Colloids and Surfaces, Journal of Adhesion Science and Technology, Journal of Coating Technology (JCT),