

IMS MEMBER'S PUBLICATIONS

2015-16

DOUGLAS J. ADAMS

1. Harvey, B.M., Eschbach M M., Glynn, E.A., Kotha, S., Darre, M., Adams, D.J., Ramanathan, R., Mancini, R., Govoni, K.E., Effect of daily lithium chloride administration on bone mass and strength in growing broiler chickens. *Poultry Sci*, 00:1-6, doi: 10.3382/ps/peu079, 2015.
2. Dole, N.S., Kapinas, K., Kessler, C.B., Yee, S-P., Adams, D.J., Pereira, R.C., Delany, A.M., A Single Nucleotide Polymorphism in Osteonectin 3' Untranslated Region Regulates Bone Volume and is Targeted by miR-433. *J Bone Min Res*, 30(4):723-732, 2015. PMID 25262637
3. Choudhary, S., Canalis, E., Estus, T., Adams, D.J., Pilbeam, C.C., Cyclooxygenase-2 Suppresses the Anabolic Response to PTH Infusion in Mice. *PLoSONE*10(3):e0120164. doi:10.1371/journal.pone.0120164, 2015.
4. Dymont, N.A., Hagiwara, Y., Jiang, X., Huang, J.P., Adams, D.J., Rowe, D.W., Response of Knee Fibrocartilage to Joint Destabilization. *Osteoarth Cartil*, 23(6):996-1006, 2015. PMID 25680653
5. Hagiwara, Y., Dymont, N.A., Jiang, X., Huang, J.P., Ackert-Bicknell, C., Adams, D.J., Rowe, D.W., Fixation Stability Dictates the Differentiation Pathway of Periosteal Progenitor Cells in Fracture Repair. *J Orthop Res*, 33(7):948-956, 2015. PMID 25639792
6. Adams, D.J., Ackert-Bicknell, C.L., Genetic regulation of bone strength: a review of animal model studies. *BoneKEy Reports* 4, Article number: 714 (2015), doi:10.1038/bonekey.2015.83.
7. Sharmin, F., Adams, D.J., Pensak, M., Dukas, A., Lieberman, J., Khan, Y., Biofunctionalizing Devitalized Bone Allografts through Polymer-Mediated Short and Long Term Growth Factor Delivery. *J Biomed Mater Res A*, 103(9):2847-2854, 2015. PMID 25689463
8. Tinsley, B.A., Dukas, A., Pensak, M., Adams, D.J., Tang, H., Ominsky, M.S., Ke H.Z., Lieberman, J.R., Systemic Administration of Sclerostin Antibody Enhances BMP-Induced Bone Repair in a Rat Femoral Defect Model. *J Bone Joint Surg*, 97(22):1852-1859, 2015. PMID 26582615

MARK AINDOW

1. Ayala, C.J., Aindow, M., Deligöz, H., Erkey, C., Electrochemical Performance of Fuel Cell Catalysts Prepared by Supercritical Deposition: Effect of Different Precursor Conversion Routes, SE Bozbağ, T Gümüşoğlu, S Yilmaztürk, *J Supercrit Fluids*. 97: 154-164 (2015).
2. Gambino, L.V., Magdefrau, N.J., Aindow, M., Microstructural Effects of the Reduction Step in the Reactive Consolidation of Manganese Cobaltite Coatings on Crofer® 22 APU, *Mater High Temp*. 32: 142-147 (2015).
3. Kolasinski, K.W., Barclay, W.B., Sun, Y., and Aindow, M., The stoichiometry of metal assisted etching (MAE) of Si in V2O5 + HF and HOOH + HF solutions, *Electrochim Acta*. 158: 219-228 (2015).
4. Kuo, C-H., Mosa, I.M., Thanneeru, S., Sharma, V., Zhang, L.C., Biswas, S., Aindow, M., Alpay, S.P., Rusling, J.F., Suib, S.L., and He, J., Facet-dependent catalytic activity of MnO electrocatalysts for oxygen reduction and oxygen evolution reactions, *Chem Comm*. 51: 5951-5954 (2015).
5. Sun, Y., Haley, J., Kulkarni, K., Aindow, M., Sachdev, A. K., and Lavernia, E. J., Influence of electric current on microstructure evolution in Ti/Al and Ti/TiAl3 during spark plasma sintering, *J Alloys Comp*. 648: 1097-1103 (2015).

IMS MEMBER'S PUBLICATIONS

2015-16

6. Yu, H., Sun, Y., Kesim, M.T., Harmon, J., Potter, J., Alpay, S.P., and Aindow, M., Surface Degradation of Ag/W Circuit Breaker Contacts During Standardized UL Testing, *J Mater Eng Perf.* 24, 3251-3262 (2015).
7. Aindow, M., Preface to the 50th Anniversary Issue of the Journal of Materials Science, *J Mater Sci* 51: 1-6 (2016).
8. Gambino, L.V., Freeman, A.B., Magdefrau, N.J., and Aindow, M., ALCHEMI Studies of Site Occupancies in Cr-, Ni- and Fe-substituted Manganese Cobaltite Spinels, *J Mater Sci* 51: 158-170 (2016).
9. Yu, H., Kesim, M.T., Sun, Y., Harmon, J., Potter, J., Alpay, S.P., and Aindow, M., Extended Aging of Ag/W Circuit Breaker Contacts: Influence on Surface Structure, Electrical Properties and UL Testing Performance, *J Mater Eng Perf* 25: 91-101 (2016).
10. Gambino, L.V., Magdefrau, N.J., Aindow, M., Microstructural Evolution in Manganese Cobaltite Films Grown on Crofer 22 APU Substrates by Pulsed Laser Deposition, *Surf Coat Tech* 286: 206-214 (2016).
11. Khassaf, H., Khakpash, N., Vijayan, S., Aindow, M., Alpay, S.P., Electrostatically Driven Dielectric Anomaly in Mesoscopic Ferroelectric-Paraelectric Bilayers, *Acta Mater* 105: 68-74 (2016).
12. Jafari, T., Jiang, T., Zhong, W., Khakpash, N., Deljoo, B., Aindow, M., Singh, P., Suib, S., Modified Mesoporous Silica for Efficient Siloxane Capture, *Langmuir* 32: 2369-2377 (2016).

PAMIR ALPAY

1. Maurya, D., Sun, F., Alpay, S.P., and Priya, S., "A New Method for Achieving Enhanced Dielectric Response over a Wide Temperature Range," *Scientific Reports* 5, 15144 (2015).
2. Yu, H., Sun, Y., Kesim, M.T., Harmon, J., Potter, J., Alpay, S.P., and M. Aindow, "Surface Degradation of Ag/W Circuit Breaker Contacts During Standardized UL Testing," *Journal of Materials Engineering and Performance* 24, 3251–3262 (2015).
3. Sun, F., Dongare, A.M., Asandei, A.D., Alpay, S.P., and Nakhmanson, S.M., "Temperature Dependent Structural, Elastic, and Polar Properties of Ferroelectric Polyvinylidene Fluoride (PVDF) and Trifluoroethylene (TrFE) Copolymers," *J. Mater. Chem. C* 3, 8389–8396 (2015).
4. Kuo, C.-H., Mosa, I.M., Thanneeru, S., Sharma, V., Zhang, L., Biswas, S., Aindow, M., Alpay, S.P., Rusling, J.F., Suib, S.L., He, J., "Facet-dependent Catalytic Activity of MnO Electrocatalysts for Oxygen Reduction and Oxygen Evolution Reactions," *Chem. Commun.* 51, 5951-5954 (2015).
5. Khakpash, N., Khassaf, H., Rossetti Jr. G.A., and Alpay, S.P., "Misfit Strain Phase Diagrams of Epitaxial PMN-PT Films," *Appl. Phys. Lett.* 106, 082905 (2015).
6. Yu, H., Sun, Y., Alpay, S.P., and Aindow, M., "Microstructure Effects in Braze Joints Formed Between Ag/W Electrical Contacts and Sn-Coated Cu using Cu-Ag-P Filler Metal," *J. Mater. Sci.* 50, 324-333 (2015).
7. Dutta, B., Biswas, S., Sharma, V., Savage, N.O., Alpay, S.P., and Suib, S.L., "Mesoporous Manganese Oxide Catalyzed Aerobic Oxidative Coupling of Anilines to Aromatic Azo Compounds," *Ang. Chem. Int. Ed.* 55, 2171-2175 (2016).

IMS MEMBER'S PUBLICATIONS

2015-16

8. Vasudevan, R.K., Khassaf, H., Cao, Y., Zhang, S., Tselev, A., Carmichael, B., Okatan, M.B., Jesse, S., Chen, L.Q., Alpay, S.P., Kalinin, S.V., and Bassiri-Gharb, N., "Acoustic Detection of Phase Transitions on the Nanoscale," *Adv. Func. Mater.* 26, 478-486 (2016), inside front cover.
9. Khassaf, H., Khakpash, N., Vijayan, S., Aindow, M., and Alpay, S.P., "Electrostatically Driven Dielectric Anomaly in Mesoscopic Ferroelectric-Paraelectric Bilayers," *Acta Mater.* 105, 68–74 (2016).
10. Yu, H., Sun, Y., Kesim, M.T., Harmon, J., Potter, J., Alpay, S.P., and Aindow, M., "Extended Aging of Ag/W Circuit Breaker Contacts: Influence on Surface Structure, Electrical Properties and UL Testing," *Journal of Materials Engineering and Performance* 25, 91–101 (2016).
11. Sun, F., Espinal, Y., Kesim, M.T., and Alpay, S.P., "Are Ferroelectric Multilayers Capacitors in Series?" *J. Mater. Sci.* 51, 499–505 (2016).
12. Misirlioglu, B., Sen, C., Kesim, M.T., and Alpay, S.P., "Low-Voltage Ferroelectric-Paraelectric Superlattices as Gate Materials for Field Effect Transistors," *J. Mater. Sci.* 51, 487–498 (2016).

WILLIAM BAILEY

1. Wiberg, K.B., Lambert, K.M., Bailey, W.F., The Role of CH...O Coulombic Interactions in Determining Rotameric Conformations of Phenyl Substituted 1,3-Dioxanes and Tetrahydropyrans. *J. Org. Chem.* 2015, 80, 7884 – 7889.
2. Bailey, W.F., Lambert, K.M., Wiberg, K.B., Mercado, B.Q., The Effect of Remote Aryl Substituents on the Conformational Equilibria of 2,2-Diaryl-1,3-dioxanes: Importance of Electrostatic Interactions. *J. Org. Chem.* 2015, 80, 4108 – 4115
3. Kelly, C.B., Lambert, K.M., Mercadante, M.A., Ovian, J.M., Bailey, W.F., Leadbeater, N.E., Access to Nitriles from Aldehydes Mediated by an Oxoammonium Salt. *Angew. Chem., Int. Ed.* 2015, 54, 4241 – 4245.
4. Wiberg, K.B., Lambert, K.M., Bailey, W.F., Rotamers of Phenyl Substituted 1,3-Dioxanes and Tetrahydropyrans: Importance of CH...O Coulombic Interactions. *Tetrahedron Lett.* 2015, 56, 3438 – 3440.

GEORGIOS BOLLA

1. Zhou, Z., Han, L., Nordness, O., Bollas, G.M., Continuous regime of chemical looping combustion (CLC) and chemical-looping with oxygen uncoupling (CLOU) reactivity of CuO oxygen carriers. *Appl Catal B Environ.* 2015;166-167:132-44.
2. Zhou, Z., Han, L., Bollas, G.M., Model-assisted analysis of fluidized bed chemical-looping reactors. *Chem. Eng. Sci.* 2015;134:619-631.
3. Gamliel, D.P., Du, S., Bollas, G.M., Valla, J.A., Investigation of in-situ and ex-situ catalytic pyrolysis of miscanthus x giganteus using a PyGC-MS microsystem and comparison with a bench-scale spouted-bed reactor. *Bioresour Technol.* 2015;191:197-96.
4. Fischer, A., Du, S., Valla, J.A., Bollas, G.M., The effect of temperature, heating rate, and ZSM-5 catalyst on the product selectivity of the fast pyrolysis of Spent Coffee Grounds, *RSC Adv.* 2015; 5, 29252–61.
5. Han, L., and Bollas, G.M., Chemical-looping combustion in a reverse-flow fixed bed reactor, *Energy.* 2016;102:669-81.

IMS MEMBER'S PUBLICATIONS

2015-16

- Palmer, K.A., Hale, W.T., Bollas, G.M., Optimal Design of tests for heat exchanger fouling identification, *Appl. Thermal Eng.* 2016;95:382-93.
- Nordness, O., Han, L., Zhou, Z., Bollas, G.M., High-pressure chemical-looping of methane and synthesis gas with Ni and Cu oxygen carriers, *Energy & Fuels*. 2016;30(1):504-14.
- Du, S., Gamliel, D.P., Giotto, M.V., Valla, J.A., Bollas, G.M., Coke formation mechanisms of model compounds relevant to pyrolysis bio-oil over ZSM-5. *Appl. Catal. A General*. 2016; 513:67-81
- Han, L., and Bollas, G.M., Chemical-looping combustion in a reverse-flow fixed bed reactor, *Energy*. 2016;102:669-81.
- Palmer, K.A., Hale, W.T., Bollas, G.M., Optimal Design of tests for heat exchanger fouling identification, *Appl. Thermal Eng.* 2016;95:382-93.
- Nordness, O., Han, L., Zhou, Z., Bollas, G.M., High-pressure chemical-looping of methane and synthesis gas with Ni and Cu oxygen carriers, *Energy & Fuels*. 2016;30(1):504-14.
- Du, S., Gamliel, D.P., Giotto, M.V., Valla, J.A., Bollas, G.M., Coke formation mechanisms of model compounds relevant to pyrolysis bio-oil over ZSM-5. *Appl. Catal. A General*. 2016; 513:67-81

YANG CAO

- Ma, R., Sharma, V., Baldwin, A.F., Tefferi, M., Offenbach, I., Cakmak, M., Weiss, R., Cao, Y., Ramprasad, R., Sotzing, G.A., "Rational Design and Synthesis of Polythioureas as Capacitor Dielectrics", *J. Mater. Chem. A*, 2015 3 (28), 14845-14852, DOI: 10.1039/C5TA01252J
- Baldwin, A.F., Huan, T.D., Ma, R., Mannodi-Kanakkithodi, A., Tefferi, M., Katz, N., Cao, Y., Ramprasad, R., Sotzing, G.A., "Rational Design of Organotin Polyesters", *Macromolecules*, 2015, 48 (8), pp 2422–2428
- Baldwin, A.F., Ma, R., Mannodi-Kanakkithodi, A., Doan Huan, T., Wang, C., Tefferi, M., Marszalek, J.E., Cakmak, M., Cao, Y., Ramprasad, R., and Sotzing, G.A., "Poly(dimethyltin glutarate) as a Prospective Material for Dielectric Applications", *Advanced Materials*, 27, 347-351, 2015.
- Zhang, Q.M., Yu, M., Cao, Y., "Electrets and Related Phenomena", *IEEE Transactions on Dielectrics and Electrical Insulation*, Vol. 22, No. 3, pp.1335-1336, 2015.
- Uehara, H., Li, Z.Z., Chen, Q., Montanari, G.C., Cao, Y., "The effect of thermal gradient on space charge pattern in XLPE", *IEEE Annual Report Conference on Electrical Insulation and Dielectric Phenomena*, Ann Arbor, Oct.18-21, pp. 138-141, 2015.
- Zongze, L., Uehara, H., Ramprasad, R., Boggs, S., and Cao, Y., "Pre-breakdown Conduction in Polymeric Films", *2015 IEEE Annual Report Conference on Electrical Insulation and Dielectric Phenomena*, Ann Arbor, MI, October 18-21, pp. 872-875, 2015..
- Mattewos T., Ma, R. Treich, G., Sotzing, G., Ramprasad, R., Cao, Y., "Novel Dielectric Films with High Energy Density", *2015 IEEE Annual Report Conference on Electrical Insulation and Dielectric Phenomena*, Ann Arbor, MI, October 18-21, pp.451-454, 2015
- Cox, P., Fleming, R., Krajick, F., Boggs, S., Cao, Y., "AC and Impulse Performance of Medium Voltage Ethylene Propylene–Rubber Cables With Over 25 Years of In-Service Aging in a Wet Underground Environment", *IEEE Electrical Insulation Magazine*, Vol. 32, No. 3, pp.23-27, 2016.

IMS MEMBER'S PUBLICATIONS

2015-16

BAKI CETEGEN

1. Wagner, J. A., Grib, S. W., Renfro, M. W. and Cetegen, B. M., "Flowfield measurements and flame stabilization of a premixed reacting jet in vitiated crossflow," *Combustion and Flame*, Vol. 162, pp. 3711-3727, 2015
2. Nordeen, C. A., Schwer, D., Schauer, F., Hoke, J., Barber, T. and Cetegen, B. M., "Role of Inlet Reactant Mixedness on the Thermodynamic Performance of a Rotating Detonation Engine," *Shock Waves*, Vol. 25, No. 3, pp. 1-12, May 2015
3. Emerson, B., Jagtap, S., Quinlan, J. M., Renfro, M. W., Cetegen, B. M., Lieuwen, T., "Stability Analysis of Reacting Wakes: Flow and Density Asymmetry Effects", *Physics of Fluids*, Vol. 28, 045101 (2016); <http://dx.doi.org/10.1063/1.4943238>

BODHI CHAUDHURI

1. Naik, S., Chaudhuri, B., Quantifying dry milling in pharmaceutical processing: A review on experimental and modeling approaches, *Journal of Pharmaceutical Sciences*, 104, 8, 2601-2612, 2015.
2. Naik, S., Gupta, V., Sarkar, S., Hancock, B., Abramov, Y., Yu, W., Chaudhuri, B., A combined experimental and numerical approach to explore tribocharging of pharmaceutical excipients in a hopper chute assembly, *International Journal of Pharmaceutics*, 491, 1-2, 58-68, 2015.
3. Naik, S., Hancock, B., Abramov, Y., Yu, W., Rowland, M., Huang, Z., Chaudhuri, B., Quantification of tribocharging of pharmaceutical powders in V-blenders: Experiments, Multi-scale Modeling and Simulations, *Journal of Pharmaceutical Sciences*, 105, 4, 1467-1477, 2016.
4. Sahni, E., Naik, S., Chaudhuri, B., Numerical Simulations of Unit Operations in Pharmaceutical Dosage Forms, Chapter 13, *Computational Approaches in Pharmaceutical Solid State Chemistry* Edited by Yuriy Abramov, Wiley Inc, 2016.

XU CHEN

1. Chen, X., Jiang, T., and Tomizuka, M., Pseudo, Y-K., Parameterization with Control of the Waterbed Effect for Local Loop Shaping. *Automatica*, 62: 177-183. 2015.
2. Chen, X., and Tomizuka, M., Overview and New Results in Disturbance Observer based Adaptive Vibration Rejection With Application to Advanced Manufacturing. *International Journal of Adaptive Control and Signal Processing*, 29: 1459-1474. 2015.
3. Chen, X., and Tomizuka, M., Discrete-time Reduced-Complexity Youla Parameterization for Dual-input Single-output Systems. *IEEE Transactions on Control Systems Technology*, 2015.
4. Jiang, T., and Chen, X., An Open-source Selective Laser Sintering Additive Manufacturing System. *International Conference on Complex Systems Engineering*, November 2015.
5. Kim, W., Chen, X., Chung, C. C., and Tomizuka, M., Discrete-time Output Feedback Nonlinear Control for Combined Low- and High-frequency Disturbance Compensation. In *Proceedings of American Control Conference*, pages 5495-5501, July 2015.

IMS MEMBER'S PUBLICATIONS

2015-16

6. Zhang, W., Chen, X., Bae, J., and Tomizuka, M., Real-time Kinematic Modeling and Prediction of Human Joint Motion in a Networked Rehabilitation System. In Proceedings of American Control Conference, pages 5800-5805, July 2015.
7. Silva, A. C., DoréLandau, I., Dugard, L., and Chen, X., Modified Direct Adaptive Regulation Scheme Applied to a Benchmark Problem. European Journal of Control, January 2016.
8. Chen, X., and Xiao, H., Multirate Forward-model Disturbance Observer for Feedback Regulation beyond Nyquist Frequency. In American Control Conference, July 2016.
9. Jiang, T., and Chen, X., Input-to-output Discontinuity and Transient Improvement in Add-on Control Design. In American Control Conference, July 2016.
10. Sun, L., Chen, X., and Tomizuka, M., Enhanced Wide-Spectrum Vibration Suppression Based on Adaptive Loop Shaping. In American Control Conference, July 2016.
11. Zheng, M., Chen, X., and Tomizuka, M., Extended State Observer with Phase Compensation to Deal with High-frequency Vibrations in Hard Disk Drives. In American Control Conference, July 2016.

MARIA CHRYSOCHOOU

1. Bompoti, N., Chrysochoou, M. and Dermatas, D., 2015. "Geochemical characterization of Greek ophiolitic environments using statistical analysis", Environmental Processes, 2, (Suppl 1), S5-S21 DOI: 10.1007/s40710-015-0097-z.
2. Chrysochoou, M., 2015. "Geochemistry in Geotechnical Engineering Problems: Ettringite as Case Study", Geotechnical Engineering Journal of the SEAGS & AGSSEA Vol. 46 No. 4 December 2015 ISSN 0046-5828.
3. Mystrioti, C., Sparis, D., Papassiopi, N., Xenidis, A., Dermatas, D. and Chrysochoou, M., 2015. "Assessment of Polyphenol Coated Nano Zero Valent Iron for Hexavalent Chromium Removal from Contaminated Waters" Bulletin of Environmental Contamination and Toxicology, 94(3), 302-307.
4. Panagiotakis, I., Dermatas, D., Vatsaris, C., Chrysochoou, M., Papassiopi, N., Xenidis, A., and Vaxevanidou, K., 2015. Forensic Investigation of a Chromium(VI) groundwater plume in Thiva, Greece, Journal of Hazardous Materials, 281. 27-34.
5. Dermatas, D., Mpouras, A., Chrysochoou, M., Vatsaris, C., Papassiopi, N., Xenidis, A., Theologou, E. and Bompoti, N., 2015. Origin and concentration profile of chromium in a Greek aquifer, Journal of Hazardous Materials, 281, 35-46.
6. Chrysochoou, M. and Johnston, C.P., 2015. Sulfur speciation and reactivity in calcium-polysulfide treated soil, Journal of Hazardous Materials, 281, 87-94.
7. Johnston, C.P., and Chrysochoou, M., 2015. Mechanisms of chromate adsorption on boehmite, Journal of Hazardous Materials, 281, 56-63.
8. Mystrioti, C., Papassiopi, N., Xenidis, A., Dermatas, D. and Chrysochoou, M., 2015, "Column study for the evaluation of the transport properties of polyphenol coated nano iron", Journal of Hazardous Materials, 281, 64-69.

IMS MEMBER'S PUBLICATIONS

2015-16

PU-XIAN GAO

1. Wang, S., Ren, Z., Guo, Y., Gao, P.-X., "One-Dimensional Nanostructure-Enhanced Catalysis", in Encyclopedia of Inorganic and Bioinorganic Chemistry, edited by Timothy P. Hanusa, John Wiley & Sons, Ltd: Chichester, UK, 2015, ISBN 978-1-118-70328-1, 387-415.
2. Wang, S., Ren, Z., Song, W.Q., Guo, Y.B., Suib, S.L., Gao, P.X., "ZnO/Perovskite core-shell nanorod array based monolithic catalysts with enhanced propane oxidation and material utilization efficiency at low temperature," Catalysis Today, 2015, 549-555.
3. Ren, Z., Guo, Y.B., Gao, P.X., "Nano-array based monolithic catalysts: Concept, Rational Materials Design and Tunable Catalytic Performance," Catalysis Today, 2015, 258(2), 441-453.
4. Wang, S.B., Ren, Z., Guo, Y.B., Gao, P.X., "Nano-array integrated monolithic devices: toward rational materials design and functional performance by scalable self-assembly of nanostructures", CrystEngComm, 2016, 18, 2980-2993. (Invited highlight, Inside Cover)
5. Lin, H.J., Baltrus, J., Gao, H.Y., Ding, Y., Nam, C.-Y., Ohodnicki, P., and Gao, P.X., "Perovskite sensitized Ga₂O₃ nanorod array sensors at High temperature," 2016, ACS Materials & Interfaces, 8 (14), 8880-8887.
6. Chen, S.Y., Song, W., Lin, H.-J., Wang, S., Biswas, S., Mollahosseini, M., Kuo, C.-H., Gao, P.X., Suib, S., "Manganese Oxide Nanoarray-Based Monolithic Catalysts: Tunable Morphology and High Efficiency for CO Oxidation," 2016, ACS Materials & Interfaces, 8 (12), 7834-7842.
7. Ren, Z., Wu, Z., Song, W., Xiao, W., Guo, Y.B., Ding, J., Suib, S.L., and Gao, P.X., "Low Temperature Propane Oxidation over Co₃O₄ based Nano-array Catalysts: Ni Dopant Effect, Reaction Mechanism and Structural Stability," Appl. Catal. B, 2016, 180, 150-160.

JIE HE

1. Liu, B., Luo, Z., Federico, A., Song, W., Suib, S.L., He, J., Colloidal amphiphile-templated growth of highly crystalline meso-porous non-siliceous oxides, Chem. Mater. 2015, 27, 6173-6176.
2. Liu, Y., He, J., Yang, K., Yi, C., Liu, Y., Nie, L., Khashab, N.M., Chen, X., Nie, Z., Folding up of gold nanoparticle strings into plasmonic vesicles for enhanced photoacoustic imaging, Angew. Chem. Int. Ed. 2015, 54, 15809-15812.
3. Li, W., Thanneeru, S., Kanyo, I., Liu, B., He, J., Amphiphilic hybrid nano building blocks with surfactant-mimicking structures, ACS Macro Lett. 2015, 4, 736-740.
4. Liu, B., Kuo, C.-H., Chen, J., Luo, Z., Thanneeru, S., Li, W., Song, W., Biswas, Suib, S.L., He, J., Ligand-assisted co-assembly approach toward mesoporous hybrid catalysts of transition-metal oxides and noble metals: photochemical water splitting, Angew. Chem. Int. Ed. 2015, 54, 9061-9065.
5. Wang, L., Liu, Y., He, J., Hourwitz, M.J., Yang, Y., Fourkas, J.T., Han, X., Nie, Z., Continuous microfluidic self-assembly of hybrid Janus-like vesicular motors: autonomous propulsion and controlled release, Small, 2015, 11, 3762-3767.

IMS MEMBER'S PUBLICATIONS

2015-16

6. Kuo, C-H., Mosa, I., Thanneeru, S., Sharma, V., Zhang, L., Biswas, S., Aindow, M., Alpay, P., Rusling, J.F., Suib, S.L., He, J., Facet-dependent catalytic activity of MnO electrocatalysts for oxygen reduction and oxygen evolution reactions, *Chem. Comm.* 2015, 51, 5951-5954.
7. Kuo, C-H., Mosa, I.M., Poyraz, A.S., Biswas, S., El-Sawy, A.M., Song, W., Luo, W., Chen, S-Y., Rusling, J.F., Jie He, and Steven L. Suib*, Robust mesoporous manganese oxide catalysts for water oxidation, *ACS Catalysis*, 2015, 5, 1693–1699.
8. Li, W., Kanyo, I., Kuo, C-H., Thanneeru, S., He, J., pH-programmable self-assembly of plasmonic nanoparticles: hydrophobic interaction versus electrostatic repulsion, *Nanoscale*, 2015, 7, 956-964.
9. Kuo, C-H., Li, W., Pahalagedara, L., El-Sawy, A.M., Kriz, D., Genz, N., Guild, C., Ressler, T., Suib, S.L., He, J., Understanding the role of gold nanoparticles in enhancing the catalytic activity of manganese oxides in water oxidation reactions, *Angew. Chem. Int. Ed.* 2015, 54, 2345–2350.
10. Liu, B., Yao, H., Daniels, R., Song, W., Zheng, H., Jin, L., Suib, S.L., He, J., A facile synthesis of Fe₃C@mesoporous carbon nitride nanospheres with superior electrocatalytic activity, *Nanoscale*, 2016, 8, 5441-5445.
11. Li, W., Wang, K., Zhang, P., He, J., Xu, S., Liao, Y., Zhu, J., Xie, X., Nie, Z., Self-assembly of shaped nanoparticles into free-standing 2D and 3D superlattices, *Small* 2016, 12, 499–505.

RAINER HEBERT

1. Hebert, R.J., "Viewpoint: metallurgical aspects of metal powder-bed additive manufacturing", *J Mater Sci*, (2015), vol. 51 (3), 1165-1175.
2. Vaidya, S., Zhang, L., Maddala M., Hebert, R., Wright, J., Shukla, A., Kim, J.-H. (2015) "Quasi-static response of sandwich steel beams with corrugated cores", *Engr Struct*, vol. 97, 80-89
3. Wright, J., Hebert, R., Maddala, D., Shukla, A. (2015) "Experimental study on the response of graded corrugated steel armor to shock loading", *Meccanica*, vol. 50(2), 479

BRYAN HUEY

1. Rivas, M., Vyas, V., Carter, A., Veronick, J., Khan, Y.,... - *Journal of Materials Research*, 2015, Nanoscale mapping of in situ actuating microelectromechanical systems with AFM
2. Kutes, Y., Aguirre, B.A., Bosse, J.L., Cruz-Campa, J.L.,... - *Progress in Photovoltaics: Research and Applications*, 2015, Mapping photovoltaic performance with nanoscale resolution
3. Kutes, Y., Zhou, Y., Bosse, J.L., Steffes, J., Padture, N.P.,... - *Nano Letters*, 2016, Mapping the Photoresponse of CH₃NH₃PbI₃ Hybrid Perovskite Thin Films at the Nanoscale
4. Sharma, V., Mahapatra, M.K., Krishnan, S., Thatcher, Z.,... - *Journal of Materials Chemistry A*, 2016, Effects of moisture on (La, A) MnO₃ (A= Ca, Sr, and Ba) solid oxide fuel cell cathodes: a first-principles and experimental study

IMS MEMBER'S PUBLICATIONS

2015-16

MENKA JAIN

1. McDannald, A., and Jain, M., Magnetocaloric Properties of Rare-Earth Substituted DyCrO₃, *Journal of Applied Physics* 118 (2015) 043904.
2. Sharma, V., McDannald, A., Staruch, M., Ramprasad, R., and Jain, M., Dopant-mediated improved structural and magnetic properties of TbMnO₃, *Applied Physics Letters* 107 (2015) 012901.
3. Alraddadi, S., Hines, W., Yilmaz, T., Gu, G., McDannald, A., Jain, M., and Sinkovic, B., Magnetic and Transport Properties of Epitaxial Fe₃O₄ Films Grown at Different Oxygen Pressure, *Materials Research Express* 2 (2015) 066402.
4. McDannald, A., Kuna, L., Seehra, M., and Jain, M., Magnetic Exchange Interactions of Rare-Earth Substituted DyCrO₃ Bulk Powders, *Physical Review B* 91 (2015) 224415.
5. Yin, S., Sharma, V., McDannald, A., Reboredo, F.A., and Jain, M., Magnetic and magnetocaloric properties of iron substituted holmium chromite and dysprosium chromite, *RSC Advances*, 6 (2016) 9475.

ROBERT KELLY

1. Karl, M., Beck, N., Kelly, J.R., Fraktur einer Lithium Disilikat Krone bei der Zementierung. *Deutsche Zahnärztliche Zeitschrift* | 2015; 70(1):20-24.
2. Sultan, H., Kelly, J.R., Kazemi, R.B., Investigating failure behavior and origins during supposed "shear bond" loading. *Dent Mater* 2015;31(7):807-13
3. Gressler, M.L., Kelly, J.R., Bottino, M.A., Hill, T., (2015). Influence of the resin cement thickness on the fatigue failure loads of CAD/CAM feldspathic crowns. *Dent Mater.* 31(8):895-900

DEBRA KENDALL

1. Picone, R.L., and Kendall, D.A., (2015) From the Bench, Toward the Clinic: Therapeutic Opportunities for Cannabinoid Receptor Modulation, *Mol. Endocrinol.* 29, 801-813.
2. Scott, C.E., Ahn, K.H., Graf, S.T., Goddard III, W.A., Kendall, D.A., and Abrol, R., (2016) Computational Prediction and Biochemical Analyses of New Inverse Agonists for the CB₁ Cannabinoid Receptor and the Implications for Drug Design, *J. Chem. Inf. Model.*, 56, 201-212; co-corresponding author.
3. Lu, D., Dopart, R., and Kendall, D.A., (2016) Controlled Downregulation of the Cannabinoid CB₁ Receptor Provides a Promising Approach for the Treatment of Obesity and Obesity-derived Type 2 Diabetes, *Cell Stress Chaperon.* 21, 1-7.

IMS MEMBER'S PUBLICATIONS

2015-16

CHALLA KUMAR

1. Novak, M.J., Pattammattel, A., Koshmerl, B., Puglia, M., Williams, C., and Kumar, C.V., 'Stable-on-the-Table' Enzymes: Engineering Enzyme-Graphene Oxide Interface for unprecedented stability of the biocatalysts, *ACS Catalysis*, (2015), 6, 339-447.
2. Pattammattel, A., and Kumar, C.V., Kitchen chemistry 101: Efficient exfoliation of high quality graphene with a blender and edible proteins, in press *Adv. Functional Mater.*, (2015), Oct 15/15.
3. Kumar, C. V., Benson, K. B., Baveghems, C., Stromer, B.S., Thilakarathne, V.K., Novac, M.J., and Rossi, Toward the design of bio-solar cells: High efficiency cascade energy transfer among four donor-acceptor dyes self assembled in highly ordered protein-DNA matrix, *RSC Advances*, 2015, 5, 72416-72422, DOI:10.1039/C5RA14208C.
4. Zore, O., Pattammattel, A., Gnanaguru, S., Kumar, C.V., and Kasi, R., 'Bienzyme-Polymer-Graphene Oxide quaternary hybrid biocatalysts: Efficient substrate channeling at chemically and thermally denaturing conditions, *ACS Catalysis*, 2015,5, 4979-4988, doi.org/10.1021/acscatal.5b00958.
5. Pattammattel, A., Williamns, C.L., Pande, P., Tsui, W.G., Basu, A.K., and Kumar, C.V., Biological relevance of oxidative debris present in as-prepared graphene oxide, *RSC Advances*, 2015, 5, 59364-59372, DOI: 10.1039/C5RA10306A.
6. Deshapriya, I., Stromer, B.S., Kim, C.S., Patel, V., Gutkind, J.S., and Kumar, C.V., Novel, proteinbased nanoparticles: Improved half-lives, retention of protein structure and activities, *Bioconj. Chem.*, (2015), 26, 396-404, DOI: 10.1021/bc500621h.
7. Riccardi, C.M., Mistri, D., Hart, O., Anuganti, M., Lin, Y., Kasi, R. M., and Kumar, C.V., Covalent interlocking of glucose oxidase and peroxidase in the voids of paper: Enzyme-Polymer 'Spider-Webs', *Chem. Comm.*, (2016), 52, 2593-96, DOI: 10.1039/c6cc00037a

SANGAMESH G. KUMBAR

1. Lee, P., Tran, K., Zhou, G., Bedi, A., Shelke, N.B., Yu, X., and Kumbar, S.G., Guided Differentiation of Bone Marrow Stromal Cells on Co-Cultured Cartilage and Bone Scaffolds. *Soft Matter*, 2015,11, 7648-7655 (Note- SGK and XY both corresponding authors) Impact Factor- 4.029
2. Lee, P., Tran, K., Chang, W., Fang, S., Shelke, N.B., Yu, X., and Kumbar, S.G., Bioactive Polymeric Scaffolds for Osteochondral Tissue Engineering: In vitro Evaluation of the Effect of Culture Media on Bone Marrow Stromal Cells. *Polym. Adv. Tech.*, 2015, 26, 1476-1485. (Note- SGK and XY both corresponding authors) Impact Factor-1.757
3. Guadalupe, E., Ramos, D.M., Shelke, N.B., James, R., Gibney, C., and Kumbar, S.G., Bioactive Polymeric Nanofiber Dressings for Wound Healing. *J. Appl. Polym. Sci.* 2015, 132, 41879. (Note- E. Guadalupe and C. Gibney are BME Undergraduate Senior Design Students) Impact Factor- 1.768
4. Jaiswal, D., James, R., Shelke, N.B., Harmon, M.D., Brown, J.L., Hussain, F., and Kumbar, S.G., Gelatin Nanofiber Matrices Derived from Schiff Base Derivative for Tissue Engineering Applications. *J. Biomed. Nanotechnology*, 2015, 11 (11), 2067-2080. Impact Factor- 5.338

IMS MEMBER'S PUBLICATIONS

2015-16

5. Vivekanandan, J., Mahudeswaran, A., Tang, X.Y., Kumbar, S.G., Vijayanand, P.S., Synthesis, characterisation, and electrical properties of novel nanostructured conducting poly(aniline-co-m-chloroaniline) with incorporated silver particles. *Chemical Papers* 2015, 69 (7), 964-972. Impact Factor- 1.468
6. Vijayanand, P.S., Mahudeswaran, A., Vivekanandan, J., Kumbar, S.G., Efficient Synthesis of Nanostructured Poly(aniline-co-m-aminobenzoic acid) Copolymer in Presence of DBSA Surfactant. *Tenside Surf. Det.* 2015, 52 3 1–6 DOI 10.3139/113.110370 Impact Factor-0.739
7. Anderson, M., Shelke, N.B., Manoukian, O.S., Yu X., and Kumbar, S.G., "Peripheral Nerve Regeneration Strategies: Electrically Stimulating Polymer Based Nerve". *Critical Reviews™ in Biomedical Engineering*, 2015, 43(2):1–28. (Note- 1. Anderson M. is a Medical Student and Manokian O.S. is an undergraduate student) Impact Factor-1.64
8. Ramos, D.M., Peach, M.S., Mazzocca, A.D., Yu, X., Kumbar, S.G., Tendon Tissue Engineering" in "Regenerative Engineering of Musculoskeletal Tissues and Interfaces" Edited by Nukavarapu, Freeman and Laurencin 2015, Woodhead Publishing Limited 2015, Pages 195-212.

CATO T. LAURENCIN

1. Bagshaw, K.I., Hanenbaum, C.I., Carbone, E.J., Lo, K. Laurencin, C.T., Walker, J., and Nair, L.S.: Pain management via local anaesthetics and responsive hydrogels. *Ther. Deliv*, 6, 165-176, (2015)
2. Jiang T, Kumbar SG, Nair LS, Laurencin CT. Biologically active chitosan systems for regenerative engineering. In: Atta-ur-Rahman, Allen B. Reitz, Iqbal Choudhary, Jizhou Wang, Eds. *Frontiers in Medicinal Chemistry Volume 7*, Bentham Science Publishers; pp. 385-414 (2015)
3. Yu, X., Tang, X., Gohil, S.V., Laurencin, C.T. *Biomaterials for Bone Regenerative Engineering. Advanced Healthcare Materials*, 4: 1268-85 (2015)
4. James, R; Mengsteab, P; Laurencin, CT. *Regenerative Engineering: Studies of the Rotator Cuff and other Musculoskeletal Soft. MRS Advances (F – Biomaterials for Regenerative Engineering)*. December (2015).
5. Deng, M., James, R., Jiang, T., Kumbar, S.G. Laurencin, C.T " Polyphosphazenes, Biodegradable" for 'Encyclopedia of Biomedical Polymers and Polymeric Biomaterials' Edited by Munmaya Mishra 2015, CRC Press expected publication date 2 April (2015).
6. Harmon, M.D., Laurencin, C.T., Kumbar, S.G. "Translational Research into New Clinical Applications" in "Biomaterials from Nature for Advanced Devices and Therapies", Edited by Nuno Neves. 2015 Wiley, Inc. expected publication date 1 May (2015)
7. Jiang, T., Kumbar, S.G., Nair, L.S., and Laurencin, C.T., "Biologically Active Chitosan Systems for Regenerative Engineering" in "Frontiers in Medicinal Chemistry" Edited by Reitz, Choudhary, Wang and Atta-ur-Rahman 2014, Bentham Science Publishers Pages 385-414 (2015)
8. James, R; Laurencin, CT. *Regenerative engineering and bionic limbs. Rare Metals Feb*; 34(3): 143-155 (2015).
9. R. Kasir, V.N. Vernekar, and C.T. Laurencin, *Regenerative Engineering of Cartilage Using Adipose Derived Stem Cells, Regenerative Engineering and Translational Medicine*, 1, 42-49 (2015).

IMS MEMBER'S PUBLICATIONS

2015-16

10. Jiang T, Carbone EJ, Lo WH, Laurencin CT. Electrospinning of polymer nanofibers for tissue regeneration. *Progress in Polymer Science* 46: 1-24 (2015).
11. Laurantin CT, Nair LS. Regenerative Engineering. Approaches to Limb regeneration and other grand challenges. *Regenerative Engineering and Translational Medicine*, 1: 1-3 (2015)

SEOK-WO LEE

1. Lee, S.-W., Mehdi, J.-Z., Chen, D., Zhang, Y.-W., Greer, J.R., "Size effect suppresses brittle failure in hollow Cu₆₀Zr₄₀ metallic glass nanolattices deformed at cryogenic temperature," *Nano Letters* 15, 5673-5681 (2015)

YU LEI

1. Sun, X.C., He, J.K., Meng, Y.T., Zhang, L.C., Zhang, S.C., Ma, X.Y., Dey, S., Zhao, J., Lei, Y., Microwave-assisted ultrafast and facile synthesis of fluorescent carbon nanoparticles from a single precursor: preparation, characterization and their application for the highly selective detection of explosive picric acid. 2016. *Journal of Material Chemistry-A* 4, 4146-4147. (IF=7.443)
2. Ma, X.Y., Sun, X.C., Hargrove, D.H., Chen, J., Song, D.H., Dong, Q.C., Lu, X.L., Fan, T.H., Fu, Y.J., Lei, Y., A biocompatible and biodegradable protein hydrogel with green and red autofluorescence: Preparation, characterization and in vivo biodegradation tracking and modeling. 2016. *Scientific Reports*. Art# 19370. (IF=5.578)
3. Bao, J., Hou, C.J., Chen, M., Li, J.J., Huo, D.Q., Yang, M., Luo, X.G., Lei, Y., Plant-esterase-chitosan/gold nanoparticles-graphene nanosheets composite based biosensor for ultrasensitive detection of organophosphate pesticides. 2015. *Journal of Agricultural and Food Chemistry*. 63 (47), 10319-10326. (IF=2.912)
4. Sun, X.C., Bruckner, C., Lei, Y., One-pot and ultrafast synthesis of nitrogen and phosphorus co-doped carbon dots possessing bright dual wavelength fluorescence emission. 2015. *Nanoscale*. 7, 17278-17282. (IF=7.394)
5. Sun, X.C., Wang, Y., Lei, Y., Fluorescence based explosives detection: From mechanisms to sensory materials. 2015. *Chemical Society Reviews*. 44, 8019-8061. DOI: 10.1039/C5CS00496A. (IF=33.383)
6. Ghimire, A., Zore, O.V., Thilakarathne, V.K., Briand, V.A., Lenehan, P.J., Lei, Y., Kasi, R.M., Kumar, C.V., 'Stable-on-the Table' Biosensors: Hemoglobin-Poly (acrylic acid) Nanogel BioElectrodes with High Thermal Stability and Enhanced Electroactivity. 2015. *Sensors*. 15(9), 23868-23885. (IF=2.245)
7. Srinivasan, G., Chen, J., Parisi, J., Brückner, C., Yao, X.D., Lei, Y., An injectable PEG-BSA-Coumarin-GOx hydrogel for fluorescence turn-on glucose detection. 2015. *Applied Biochemistry and Biotechnology*. DOI: 10.1007/s12010-015-1800-2. (IF=1.735)

IMS MEMBER'S PUBLICATIONS

2015-16

- Xu, Z.H., Liu, B.C., Dong, Q.C., Lei, Y., Li, Y., Jian, R., McCutcheon, J., Li, B.K., Flat Microliter Membrane-based Microbial Fuel Cell as "On-Line Sticker Sensor" for Self-supported In Situ Monitoring of Wastewater Shock. 2015. *Bioresource Technology*. 197, 244-251. (IF=4.494)
- Sun, X.C., Liu, Y.X., Shaw, G., Carrier, A., Dey, S., Zhao, J., Lei, Y., Fundamental study of electrospun Pyrene-PES nanofibers using mixed solvents for sensitive and selective explosives detection in aqueous solution. 2015. *ACS Applied Materials and Interfaces* 7(24), 13189-13197. (IF=6.723)
- Liu, Y.X., Zhou, K., Lei, Y., Using bayesian inference framework towards identifying gas species and concentration from high temperature resistive sensor array data. 2015. *Journal of Sensors*, Article#351940. (IF=1.182)
- Parisi, J., Dong, Q.C., Lei, Y., In-situ microfluidic fabrication of SERS nanostructures for highly sensitive fingerprint microfluidic-SERS sensing, 2015. *RSC Advances*. 5, 14081- 14089. (IF=3.840)
- Song, M.H., Lei, Y., Sun, H.W., Comparison of spherical and non-spherical particles in microchannels under dielectrophoretic force. 2015. *Microsystem Technology*, 21, 381-391. (IF=0.875)
- Mopidevi, S., Chen, J., Ma, X.Y., Galil, K.H.A.E.G., Lei, Y., PEG-fluorescein-GOx hydrogel for glucose biosensing (Invited Article). 2015. *ScienceJet* 4: 159. (IF=N/A, new journal)

YAO LIN

- Zhang, R., Song, Z., Yin, L., Zheng, N., Tang, H., Lu, H., Gabrielson, N.P., Lin, Y., Kim, K., Cheng, J., Ionic α -helical polypeptides toward nonviral gene delivery (2015) *Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology*, 7 (1), pp. 98-110.
- Shao, L., Ren, Y., Wang, Z., Qi, C., Lin, Y., Developing chitosan-based composite nanofibers for supporting metal catalysts (2015) *Polymer*, 75, pp. 168-177.
- Riccardi, C.M., Mistri, D., Hart, O., Anuganti, M., Lin, Y., Kasi, R.M., Kumar, C.V., Covalent interlocking of glucose oxidase and peroxidase in the voids of paper:Enzyme-polymer "spider webs (2016) *Chemical Communications*, 52 (12), pp. 2593-2596.

WAI HONG (KEVIN) LO

- Jiang, T., Carbone, E.J., Lo, K.W.-H., Laurencin, C.T., Electrospinning Polymers for Tissue Regeneration. *Prog Polym Sci* 46, 1-24, 2015
- Bagshaw, K., Hanenbaum, C., Carbone, E.J., Lo, K.W.-H., Laurencin, C.T., Walker, J., Nair, L.S., Pain Management via Localized Anesthetic Delivery using Responsive Hydrogels. *Ther Deliv* 6:165-76, 2015

IMS MEMBER'S PUBLICATIONS

2015-16

XIULING LU

1. Nguyen, C.T., Tran, T.H., Lu, X., Kasi, R.M., Redox-Sensitive Nanoparticles from Amphiphilic Cholesterol-Based Block Copolymers for Enhanced Tumor Intracellular Release of Doxorubicin. *Nanomedicine: Nanotechnology, Biology, and Medicine*. 2015, 11(8): 2071–2082 (Highlighted as “Potential Clinical Significance”)
2. Wasalathanthri, D.P., Li, D., Song, D., Zheng, Z., Choudhary, D., Jansson, I., Lu, X., Schenkman, J.B., Rusling, J.F., Elucidating Organ-Specific Metabolic Toxicity Chemistry from Electrochemiluminescent Enzyme/DNA Arrays and Bioreactor Bead-LC-MS/MS. *Chemistry Science*. 2015,6, 2457-2468
3. Deshapriya, I., Stromer, B., Pattammattel, A., Kim, C., Bartolome, R., Gonzales-Fajardo, L., Patel, V., Gutkind, J., Lu, X., Kumar, C., Fluorescent, Bioactive, Protein Nanoparticles (Prodots) for Rapid, Improved Uptake by Cells. *Bioconjugate Chemistry*. 2015, 26 (3), pp 396–404.
4. Gonzalez-Fajardo, L., Mahajan, L.H., Ndaya, D., Hargrove, D., Manautou, J.E., Liang, B.T., Chen, M.H., Kasi, R.M., and Lu, X., Reduced In Vivo Toxicity of Doxorubicin by Encapsulation in Cholesterol-Containing Self-Assembled Nanoparticles. *Pharmacological research*. 2016. doi:10.1016/j.phrs.2016.03.006.
5. Ma, X., Sun, X., Hargrove, D., Chen, J., Song, D., Dong, Q., Lu, X., Fan, T.H., Fu, Y., and Lei, Y., A Biocompatible and Biodegradable Protein Hydrogel with Green and Red Autofluorescence: Preparation, Characterization and In Vivo Biodegradation Tracking and Modeling. *Scientific Reports*. 2016; 6: 19370.

YANGCHAO LUO

1. Hu, Q., Gerhard, H., Upadhyaya, I., Venkitanarayanan, K., & Luo, Y. (2016). Antimicrobial eugenol nanoemulsion prepared by gum arabic and lecithin and evaluation of drying technologies. *International Journal of Biological Macromolecules*, 87, 130-140.

ANSON MA

1. S. R. Vora, B. Bognet, H. S. Patanwala, F. Chinesta, A. W. K. Ma. Surface pressure and microstructure of carbon nanotubes at an air–water interface. *Langmuir*, 31(16), 4663 – 4672 (2015)
2. W. K. Ma, S. R. Vora, Understanding the phase behavior, rheology and processing of carbon nanotube suspensions, in W. I. Milne, M. Cole (ed.) *Carbon Nanotechnology*, One Central Press (2016)
3. D. E. Tsentelovich, A. W. K. Ma, J. A. Lee, N. Behabtu, E. A. Bengio, A. Choi, J. Hao, Y. Luo, R. J. Headrick, M. J. Green, Y. Talmon, M. Pasquali Relationship of extensional viscosity and liquid crystalline transition to length distribution in carbon nanotube solutions. *Macromolecules*, 49(2), 681-689 (2016)
4. Bognet, Y. Guo, A. W. K. Ma. Controlling system components with a sound card: A versatile inkjet fluid testing platform. *Rev. Sci. Int.*, 87, 015101 (2016)

IMS MEMBER'S PUBLICATIONS

2015-16

LAKSHMI S. NAIR

1. Laurencin, C.T., Nair, L.S., Regenerative Engineering: Approaches to Limb Regeneration and other grand challenges. *Regen. Eng. Transl. Med.* 1: 1-3 (2015)
2. Gohil, S.V., Brittain, S., Kan, H.M., Drissi, H., Rowe, D., Nair, L.S., Evaluation of Enzymatically crosslinked injectable glycol chitosan gel. *J Mater Chem B* 3: 5511(2015)
3. Bagshaw, K., Hanenbaum, C., Carbone, E.J., Lo, W.H., Laurencin, C.T., Walker, J., Nair, L.S., Pain Management via localized anesthetic delivery using responsive hydrogels. *Ther Deliv.* 6:165-76 (2015) PMID: 25690085
4. Ganesh, N., Nair, S., Nair, L.S., Biomaterials Based Approach to Osteochondral Tissue Engineering. In *Regenerative Engineering of Musculoskeletal Tissues and Interfaces*, (Nukavarapu S, Freeman JW, Laurencin CT, Eds), Woodhead Publishers, p. 327-43 (2015)

MU-PING NIEH

1. Lee, C.-F., Zhang, G.-M., Nieh, M.-P., Don, T.-M., "Morphology and opto-thermal properties of the thermo-responsive PNIPAAm-protected gold nanorods" *Polymer* 84, 138-147 (2016)
2. Xia, Y., Li, M., Charubin, K., Liu, Y., Heberle, F.A., Katsaras, J., Jing, B., Zhu, Y., Nieh, M.-P., "Effects of Nanoparticle Morphology and Acyl Chain Length on Spontaneous Lipid Transfer Rates" *Langmuir* 31, 12920–12928 (2015).
3. Jin, J., Hines, W.A., Kuo, C.-H., Perry, D.M., Poyraz, A.S., Xia, Y., Zaidi, T., Nieh, M.-P., Suib, S.L., "Magnetic Studies of Mesoporous Nanostructured Iron Oxide Materials Synthesized by One-Step Soft-Templating" *Dalton Trans.* 44, 11943–11953 (2015).
4. Xia, Y., Li, M., Kučerka, N., Li, S., Nieh, M.-P., "In-situ temperature-controllable shear flow device for neutron scattering measurement—An example of aligned bicellar mixtures " *Rev. Sci. Instrum.* 86, 025112 (2015) Shen, Z., Nieh, M.-P., Li, Y., "Decorating Nanoparticle Surface for Targeted Drug Delivery: Opportunities and Challenges" *Polymers* 8, 83 (2016).
5. Indelicato, G., Wahome, N., Ringler, P., Müller, S.A., Nieh, M.-P., Burkhard, P., Twarock, R., "Principles Governing the Self-Assembly of Coiled-Coil Protein Nanoparticles" *Biophys. J.* 110, 646–660 (2016).

SYAM NUKAVARAPU

1. Majumdar, S., Pothirajan, P., Dorcemus, D., Nukavarapu, S.P., Kotecha, M., High Field Sodium MRI Assessment of Stem Cell Chondrogenesis in a Tissue-Engineered Matrix. *Ann Biomed Eng.* 2015 Jul 14. [Epub ahead of print].
2. Francois, E., Dorcemus, D., Nukavarapu, S.P., Biomaterials and Scaffolds for Musculoskeletal Tissue Engineering. In *Engineering Musculoskeletal Tissues and Interfaces*. Woodhead Publishers, Chapter 1, 3-23, 2015.
3. Nukavarapu, S.P., Casettari, L., Almobarak A, Luzzi A. Hydrogels: Cell Delivery and Tissue Regeneration. In *Encyclopedia of Biomedical Polymers and Polymeric Biomaterials*. 1st Ed.; Mishra, M., Ed.; Taylor & Francis: New York, 2015; Vol. 6, p. 3841-3852.

IMS MEMBER'S PUBLICATIONS

2015-16

4. Nukavarapu SP, Freeman J, Laurencin CT. Engineering Musculoskeletal Tissues and Interfaces, Woodhead Publishers, 2015.
5. Nukavarapu SP, Liu H, Deng T, Oyen M, Tamerler C, Advances in Structures, Properties and Applications of Biological and Bioinspired Materials, MRS F13 Symposium Proceedings, Volume 1621, Cambridge Press. 2015.
6. Amini AR, Xu TO, Chidambaram R, Nukavarapu SP. Oxygen Tension Controlled Matrices with Osteogenic and Vasculogenic Cells for Vascularized Bone Regeneration In Vivo. Tissue Eng Part A. 2016 Feb 25. [Epub ahead of print]

DAVID M. PIERCE

1. Pierce, D.M., Fastl, T.E., Rodriguez-Vila, B., Verbrugghe, P., Fourneau, I., Maleux, G., Herijgers, P., Gomez, E.J., and Holzapfel, G.A., A Method for Incorporating Residual Stretches/Stresses into Patient-Specific Simulations of Arteries, Journal of the Mechanical Behavior of Biomedical Materials, 47(0):147-164, 2015.
2. Pierce, D.M., Maier, F.S., Weisbecker, H., Viertler, C., Verbrugghe, P., Famaey, N., Fourneau, I., Herijgers, P., and Holzapfel, G.A., Human Thoracic and Abdominal Aortic Aneurysmal Tissues: Damage Experiments, Statistical Analysis and Constitutive Modeling, Journal of the Mechanical Behavior of Biomedical Materials, 41(0):92-107, 2015.

GEORGE ROSSETTI, JR

1. Pérez-Moyet, R., Stace, J., Amin, A., Finkel, P., and Rossetti, Jr., G.A., "Non-resonant electromechanical energy harvesting using inter-ferroelectric phase transitions," Appl. Phys. Lett., 107, 172901, 1-5 (2015).
2. Acosta, M., Novak, N., Rossetti, Jr., G.A., and Rödel, J., "Mechanisms of electromechanical response in $(1-x)\text{Ba}(\text{Zr}_{0.2}\text{Ti}_{0.8})\text{O}_{3-x}(\text{Ba}_{0.7}\text{Ca}_{0.3})\text{TiO}_3$ ceramics," Appl. Phys. Lett. 107, 142906, 1-5 (2015).
3. Acosta, M., Khakpash, N., Someya, T., Novak, N., Jo, W., Nagata, H., Rossetti, Jr., G. A., and Rödel, J., "Origin of the large piezoelectric activity in $(1-x)\text{Ba}(\text{Zr}_{0.2}\text{Ti}_{0.8})\text{O}_{3-x}(\text{Ba}_{0.7}\text{Ca}_{0.3})\text{TiO}_3$ ceramics," Phys. Rev. B 91, 104108, 1-11 (2015).
4. Khakpash, N., Khassaf, H., Rossetti, Jr., G. A., and Alpay, S.P., "Misfit strain phase diagrams of epitaxial PMN-PT films," Appl. Phys. Lett. 106, 082905, 1-5 (2015).

JAMES RUSLING

1. Satterwhite-Warden, J., Dixon, J., Kondepudi, D., and Rusling, J.F., Co-operative Motion of Multiple Benzoquinone (BQ) Disks at the air-water interface, PhysChemChemPhys, 2015, 17, 29891-29898. DOI: 10.1039/C5CP04471E

IMS MEMBER'S PUBLICATIONS

2015-16

- Malla, S., Kadimisetty, K., Fu, Y-J., Choudhary, D., Jansson, I., Schenkman, J.B., Rusling, J.F., Chemical Selectivity Of Nucleobase Adduction Relative To In Vivo Mutation Sites On Exon 7 Fragment Of P53 Tumor Suppressor Gene. *Chemical Science*, 2015, 6, 5554-5563. (PMCID: PMC4583204)
- Kadimisetty, K., Malla, S., Sardesai, N., Joshi, A.A., Faria, R.C., Lee, N., and Rusling, J.F., Automated Multiplexed ECL Immunoarrays for Cancer Biomarker Proteins, *Anal. Chem.* 2015, 87, 4472–4478. (PMCID: PMC4437514)
- Wasalathanthri, D.P., Li, D., Song, D., Zheng, Z., Choudhary, D., Jansson, I., Lu, X., Schenkman, J.B., Rusling, J.F., Organ-Specific Metabolic Toxicity Chemistry from Electro-Optical Enzyme/DNA Arrays and LC-MS/MS, *Chemical Science*, 2015, 6, 2457–2468. (PMCID: PMC4364445)
- Li, D., Fu, Y-J., and Rusling, J.F., Characterizing Protein Modifications by Reactive Metabolites using Magnetic Bead Bioreactors and LC-MS/MS, *Chem. Comm.* 2015, 51, 4701-4703. DOI: 10.1039/C5CC00420A (PMCID: PMC4348200)
- Krause, C.E., Otieno, B.A., Bishop, G.W., Phadke, G., Choquette, L., Lalla, R.V., Peterson, D.E., Rusling, J.F., Ultrasensitive Microfluidic Array for Serum Pro-Inflammatory Cytokines and C-Reactive Protein to Assess Oral Mucositis Risk in Cancer Patients, *Anal. Bioanal. Chem.* 2015, 407, 7239-7243. (PMCID: PMC4553140)
- Bishop, G.W., Satterwhite, J.E., Bhakta, S., Kadimisetty, K., Gillette, K.M., Chen, E., and Rusling, J.F., 3D-Printed Fluidic Devices for Nanoparticle Preparation and Flow-Injection Amperometry using Integrated Prussian Blue Nanoparticle-Modified Electrodes, *Anal. Chem.* 2015, 87, 5437–5443. (PMCID: PMC4439300)
- Bishop, G.W., and Rusling, J.F., Nanobioelectrochemistry: proteins, enzymes and biosensors, In M. V. Mirkin and S. Amemiya, Eds., *Nanoelectrochemistry*, CRC press, Boca Raton, FL, 2015, pp. 469-512.
- Cai, H., Wang, Y., Yu, Y., and Mirkin, M.V., Bhakta, S., Bishop, G.W., Joshi, A., and Rusling, J.F., Resistive-Pulse Measurements with Nanopipettes: Detection of Vascular Endothelial Growth Factor C (VEGF-C) using Antibody-decorated Nanoparticles, *Anal. Chem.*, 2015, 87, 6403–6410. PubMed # 26040997
- Doan, N., Qiang, L., Li, Z., Vaddiraju, S., Bishop, G., Rusling, J.F., Papadimitrakopoulos, F., Low-cost photolithographic fabrication of nanowires and microfilters for advanced bioassay devices, *Sensors* 2015, 15, 6091-6104 DOI:10.3390/s150x0000x, (PMCID: PMC4435220)
- Kuo, C-H., Mosa, I.M., Poyraz, A.S., Biswas, S., El-Sawy, A.M., Song, W., Luo, Z., Chen, S-Y., Rusling, J.F., He, J., and Suib, S.L., Robust Mesoporous Manganese Oxide Catalysts for Water Oxidation, *ACS Catalysis*, 2015, 5, 1693–1699
- Kuo, C., Mosa, I.M., Thanneeru, S., Sharma, V., Zhang, L., Biswas, S., Aindow, M., Alpay, S.P., Rusling, J.F., Suib, S.L., He, J., Facet-dependent catalytic activity of MnO electrocatalysts for oxygen reduction and oxygen evolution reactions. *Chem. Comm.* 2015, 51, 5951—5954. DOI: 10.1039/c0xx00000x
- Zhang, Y., Magdaong, N., Shen, M., Frank, H.A., and Rusling, J.F., Efficient photoelectrochemical energy conversion using spinach photosystem II (PSII) in lipid multilayer films, *ChemistryOpen*, 2015, 4, 111-114. published online : 21 NOV 2014, DOI: 10.1002/open.201402080

IMS MEMBER'S PUBLICATIONS

2015-16

14. Kadimisetty, K., Mosa, I.M., Malla, S., Satterwhite-Warden, J.E., Khuns, T., Faria, R.C., Lee, N.H., and Rusling, J.F., 3D-Printed Supercapacitor-Powered Electrochemiluminescent Protein Immunoarray, *Biosens. Bioelectron.*, 2016, 77, 188–193.
<http://authors.elsevier.com/a/1RmMF3PVtpROJm>; PubMed # 26406460; NIHMSID 725691
15. Dixit, C.K., Kadimisetty, K., Otieno, B., Tang, C., Malla, S., Krause, C.E., Rusling, J.F., Approaches to Low Cost, High Sensitivity, Automated, Electrochemical Multiplexed Protein Immunoassays for Cancer Diagnostics, *Analyst*, 2016, 141, 536 - 547. DOI: 10.1039/C5AN01829C; NIHMSID 735268

CRISTIAN SCHULTHESS

1. McIntosh, P., Kuzovkina, Y.A., Schulthess, C.P., and Guillard, K., 2015. Breakdown of low-level total petroleum hydrocarbons (TPH) in contaminated soil using grasses and willows. *Int. J. Phytoremediation* DOI: 10.1080/15226514.2015.1109598.

LESLIE SHOR

1. Rubinstein, R.L., Kadilak, A.L., Cousens, V.C., Gage, D.J., Shor, L.M., 2015. Protist-facilitated particle transport using emulated soil micromodels. *Environmental Science & Technology*. 49(3), 1384–1391.
2. Deng, J., Orner, E.P., Chau, J.F., Anderson, E.M., Kadilak, A.L., Rubinstein, R.L., Bouchillon, G.M., Goodwin, R., Gage, D.J., Shor, L.M., 2015. Pore-scale determination of microbially-mediated drying resistance using emulated soil micromodels. *Soil Biology & Biochemistry*. 83(4), 116–124.
3. Kadilak, A.L., Liu, Y., Shor, L.M., Mustain, W.E., 2015. "In Situ Oxygen Gradient Generation Inside a Termite-Inspired Microfluidic Habitat." *ECS Transactions*. 66(42) 1-5.

STEVEN SUIB

1. Genuino, H., Seraji, M. S., Meng, Y., Valencia, D., Suib, S. L., Combined Experimental and Computational Study of CO Oxidation Promoted by Nb in Manganese Oxide Octahedral Molecular Sieves *Appl. Catal. B: Environmental*, 2015, 163, 361-369.
2. Kuo, C.H., Mosa, I., Poyraz, A.S., Biswas, S., El-Sawy, A., Song, W., Luo, Z., Chen, S.Y., Rusling, J., He, J., Suib, S., Robust Mesoporous Manganese Oxide Catalysts for Water Oxidation, *ACS Catalysis*, 2015, 5, 1693-1699.
3. Njagi, E., Genuino, H.C., Kuo, C.H., Dharmarathna, S.; Gudz, A.; Suib, S.L., High-Yield Selective Conversion of Carbohydrates to Methyl Levulinate Using Mesoporous Sulfated Titania-based Catalysts, *Micr. Mesopor. Mat.*, 2015, 202, 68-72.

IMS MEMBER'S PUBLICATIONS

2015-16

4. Kuo, C.H., Li, W., Pahalagedara, L., El-Sawy, A. M., Kriz, D., Genz, N., Guild, C., Ressler, T., Suib, S. L., He, J., Understanding the Role of Gold Nanoparticles in Enhancing the Catalytic Activity of Manganese Oxides in Water Oxidation Reactions, *Ang. Chem. Int. Ed.*, 2015, 54, 2345 –2350.
5. Luo, Z., Poyraz, A.S., Kuo, C.H., Miao, R., Meng, Y., Chen, S. Y., Jiang, T., Wenos, C., Suib, S., Crystalline Mixed Phase (Anatase/Rutile) Mesoporous Titanium Dioxides for Visible Light Photocatalytic Activity, *Chem. Mat.*, 2015, 27, 6-17.
6. Hay, S., Obee, T., Luo, Z., Jiang, T., Meng, Y., He, J., Murphy, S., Suib, S., The Viability of Photocatalysis for Air Purification, *Molecules*, 2015, 20, 1319-1356.
7. Wasalathanthri, N., Poyraz, A.S., Biswas, S., Meng, Y., Kuo, C.H., Kriz, D., Suib, S. L., High-Performance Catalytic CH₄ Oxidation at Low Temperatures: Inverse Micelle Synthesis of Amorphous Mesoporous Manganese Oxides and Mild Transformation to K₂·xMn₈O₁₆ and ε-MnO₂, *J. Phys. Chem. C*, (2015), 119, 1473-1482.
8. Biswas, S., Poyraz, A.S., Meng, Y., Kuo, C.H., Guild, C., Tripp, H., Suib, S.L., Ion induced promotion of activity enhancement of mesoporous manganese oxides for aerobic oxidation reactions, *Appl. Catal., B: Env.*, 2015, 165, 731-741.
9. Jiang, T., Poyraz, A., Iyer, A., Zhang, Y., Luo, Z., Zhong, W., Miao, R., El-Sawy, A., Guild, C., Sun, Y., Kriz, D., Suib, S.L., Synthesis of Mesoporous Iron Oxides by an Inverse Micelle Method and Their Application in the Degradation of Orange II under Visible Light at Neutral pH, *J. Phys. Chem.*, 2015, 119, 10454-10468.
10. Jafari, T., Noshadi, I., Khakpash, N., Suib, S. L., Superhydrophobic and Stable Mesoporous Polymeric Adsorbent for Siloxane Removal: D4 Super-Adsorbent, *J. Mat. Chem. A*, 2015, 3, 5023- 5030.
11. Garces, L., Hincapie, B., Zenger, R., Suib, S., The Effect of Temperature and Support on the Reduction of Cobalt Oxide: An *In Situ* XRD Study, *J. Phys. Chem.*, 2015, 119, 5484-5490.
12. Genuino, H., Seraji, M.S., Meng, Y., Valencia, D., Suib, S. L., Combined Experimental and Computational Study of CO Oxidation Promoted by Nb in Manganese Oxide Octahedral Molecular Sieves *Appl. Catal. B: Environmental*, 2015, 163, 361-369.
13. Kuo, C.H., Mosa, I., Poyraz, A.S., Biswas, S., El-Sawy, A., Song, W., Luo, Z., Chen, S.Y., Rusling, J., He, J., Suib, S., Robust Mesoporous Manganese Oxide Catalysts for Water Oxidation, *ACS Catalysis*, 2015, 5, 1693-1699.
14. Njagi, E., Genuino, H.C., Kuo, C.H., Dharmarathna, S., Gudz, A., Suib, S.L., High-Yield Selective Conversion of Carbohydrates to Methyl Levulinate Using Mesoporous Sulfated Titania-based Catalysts, *Micr. Mesopor. Mat.*, 2015, 202, 68-72.
15. Kuo, C.H., Li, W., Pahalagedara, L., El-Sawy, A.M., Kriz, D., Genz, N., Guild, C., Ressler, T., Suib, S.L., He, J., Understanding the Role of Gold Nanoparticles in Enhancing the Catalytic Activity of Manganese Oxides in Water Oxidation Reactions, *Ang. Chem. Int. Ed.*, 2015, 54, 2345 –2350.
16. Luo, Z., Poyraz, A.S., Kuo, C.H., Miao, R., Meng, Y., Chen, S.Y., Jiang, T., Wenos, C., Suib, S., Crystalline Mixed Phase (Anatase/Rutile) Mesoporous Titanium Dioxides for Visible Light Photocatalytic Activity, *Chem. Mat.*, 2015, 27, 6-17.
17. Hay, S., Obee, T., Luo, Z., Jiang, T., Meng, Y., He, J., Murphy, S., Suib, S., The Viability of Photocatalysis for Air Purification, *Molecules*, 2015, 20, 1319-1356.

IMS MEMBER'S PUBLICATIONS

2015-16

18. Wasalathanthri, N., Poyraz, A.S., Biswas, S., Meng, Y., Kuo, C.H., Kriz, D., Suib, S.L., High-Performance Catalytic CH₄ Oxidation at Low Temperatures: Inverse Micelle Synthesis of Amorphous Mesoporous Manganese Oxides and Mild Transformation to K₂xMn₈O₁₆ and ε-MnO₂, *J. Phys. Chem. C*, (2015), 119, 1473-1482.
19. Biswas, S., Poyraz, A.S., Meng, Y., Kuo, C.H., Guild, C., Tripp, H., Suib, S.L., Ion induced promotion of activity enhancement of mesoporous manganese oxides for aerobic oxidation reactions, *Appl. Catal., B: Env.*, 2015, 165, 731-741.
20. Jiang, T., Poyraz, A., Iyer, A., Zhang, Y., Luo, Z., Zhong, W., Miao, R., El-Sawy, A., Guild, C., Sun, Y., Kriz, D., Suib, S.L., Synthesis of Mesoporous Iron Oxides by an Inverse Micelle Method and Their Application in the Degradation of Orange II under Visible Light at Neutral pH, *J. Phys. Chem.*, 2015, 119, 10454-10468.
21. Jafari, T., Noshadi, I., Khakpash, N., Suib, S. L., Superhydrophobic and Stable Mesoporous Polymeric Adsorbent for Siloxane Removal: D4 Super-Adsorbent, *J. Mat. Chem. A*, 2015, 3, 5023- 5030.
22. Garces, L., Hincapie, B., Zenger, R., Suib, S., The Effect of Temperature and Support on the Reduction of Cobalt Oxide: An *In Situ* XRD Study, *J. Phys. Chem.*, 2015, 119, 5484-5490.
23. Kuo, C.H., Mosa, I.M., Thanneeru, S., Sharma, V., Zhang, L., Biswas, S., Aindow, M., Alpay, S. P., Rusling, J.F., Suib, S.L., He, J., Facet-dependent catalytic activity of MnO electrocatalysts for oxygen reduction and oxygen evolution reactions, *J. C. S. Chem. Comm.*, 2015, 51, 5951-5954.
24. Wang, S., Ren, Z., Song, W., Guo, Y., Zhang, M., Suib, S.L., Gao, P., ZnO/Perovskite core-shell nanorod array based monolithic catalysts with enhanced propane oxidation and material utilization efficiency at low temperature, *Cat. Today*, 2015, 258, Part_2, 549-555.
25. Najafpour, M., Suib, S.L., Nano-sized Mn oxide as a true catalyst for alcohol oxidation by a mononuclear manganese(II) complex, *Dalton Trans.*, 2015, 44, 15121-15125.
26. Jiang, T., Du, S., Jafari, T., Zhong, W., Sun, Y., Song, W., Luo, Z., Hines, W.A., Suib, S., Synthesis of mesoporous gamma-Fe₂O₃ supported palladium nanoparticles and investigation of their roles as magnetically recyclable catalysts for nitrobenzene hydrogenation, *Appl. Catal. A: Gen.*, 2015, 502, 105-113.
27. Zhang, Y., Jin, L., Sterling, K., Luo, Z., Jiang, T., Miao, R., Guild, C., Suib, S. L., Potassium modified layered Ln₂O₂CO₃ (Ln: La, Nd, Sm, Eu) materials: Efficient and stable heterogeneous catalysts for biofuel production, *Green Chem.*, 2015, 17, 3600-3608.
28. Jin, J., Hines, W.A., Kuo, C.H., Perry, D.M., Poyraz, A.S., Xia, Y., Zaidi, T., Nieh, M.P., Suib, S. L., Magnetic Studies of Mesoporous Nanostructured Iron Oxide Materials Synthesized by One-Step Soft-Templating, *Dalton Trans.*, 2015, 44, 11943 - 11953.
29. Zou, J.P., Ma, J., Luo, J. M., Yu, J., He, J., Meng, Y., Luo, Z., Bao, S.K., Liu, H.L., Long, L., Sheng, L., Suib, S.L., Fabrication of Novel Few layered WS₂-Bi₂WO₆/Bi_{3.84}WO_{0.16}O_{6.24} Composites with Enhanced Photocatalytic Performance, *Appl. Catal. B*, 2015, 179, 220-228.
30. Biswas, S., Dutta, B., Mullick, K., Kuo, C.H., Poyraz, A., Suib, S.L., Efficient Aerobic Oxidation of Amines to Imines by Cesium Promoted Mesoporous Manganese Oxide, *ACS Catal.*, 2015, 5, 4394-4403.
31. Liu, B., Kuo, C.H., Chen, J., Luo, J., Thanneeru, S., Li, W., Song, W., Biswas, S., Suib, S. L., He, J., Ligand-Assisted Co-Assembly Approach toward Mesoporous Hybrid Catalysts of Transition-Metal Oxides and Noble Metals: Photochemical Water Splitting, *Ang. Chem., Int. Ed.*, 2015, 54, 9061-9065.

IMS MEMBER'S PUBLICATIONS

2015-16

32. Poyraz, A. S., Biswas, S., Kim, E., Meng, Y., Suib, S.L., Mesoporous Multivalent Transition Metal Oxides (V,Cr,Mn,Fe, and co) in Catalysis, in Comprehensive Guide for Mesoporous Materials, Properties and Development, Nova Publishers, 2015, 3, 285-314.
33. Liu, B., Luo, Z., Federico, A., Song, W., Suib, S., He, J., Colloidal amphiphile-templated growth of highly crystalline mesoporous non-siliceous oxides, *Chem. Mat.*, 2015, 27, 6173-6176.
34. Jain, R., Poyraz, A.S., Gamliel, D.P., Valla, J., Suib, S.L., Maric, R., Comparative study for low temperature water-gas shift reaction on Pt/ceria catalysts: role of different ceria supports, *Appl. Catal. A*, 2015, *Appl. Catal., A: Gen.*, 2015, 507, 1-13.
35. Chen, C.H., Njagi, E., Chen, S.Y., Horvath, D., Xu, L., Morey, A., Mackin, C., Joesten, R., Suib, S. L., Structural Distortion of Molybdenum-doped Manganese Oxide Octahedral Molecular Sieves for Enhanced Catalytic Performance, *Inorg. Chem.*, 2015, in press.
36. Dutta, B., Biswas, S., Sharma, V., Savage, N.O., Alpay, S.P., Suib, S.L., Mesoporous Manganese Oxide Catalyzed Aerobic Oxidative Coupling of Anilines to Aromatic Azo Compounds, *Ang. Chem. Int. Ed.*, 2016, 55, 2171-2175.
37. Poyraz, A., Meng, Y., Biswas, S., Suib, S.L., Mesoporous TM Oxide Materials by Surfactant-Assisted Soft templating, in Perovskites and Mixed Metal Oxides, Granger, P., Parvulescu, V. I.; Kaliaguine, S. I.; Prellier, W., Eds., Wiley VCH, NY, 701-714.
38. Guild, C. J., Kriz, D., Vovchok, D., Llorca, J., Xu, W., Bruix, A., El-Sawy, A., Biswas, S., Suib, S. L., Sennayake, S. D., In situ Studies of cerium Oxide Nanoparticles During the Water Gas Shift Reaction, *Preprints – ACS, Div. Energy & Fuels*, 2015, 60, 136.
39. Mosa, I.M., Biswas, S., El-Sawy, A.M., Botu, V., Guild, C., Song, W., Ramprasad, R., Rusling, J. F., Suib, S.L., Tunable mesoporous manganese oxide for high performance oxygen reduction and evolution reactions, *J. Mat. Chem. A*, 2016, 4, 620 – 631.
40. Bhakta, S., Seraji, S., Suib, S., Rusling, J., Antibody-like Biorecognition Sites for Proteins from Surface Imprinting on Nanoparticles, *ACS Appl. Mat. Interf.*, 2015, 7, 28197–28206.
41. Botu, V., Mhadeshwar, A., Suib, S.L., Ramprasad, R., Optimal Dopant Selection for Water Splitting With Cerium Oxides: Mining and Screening First Principles, in Information Science for Discovery and Design, Springer Ser. Materials, 2016, 225, 157-171.
42. Jiang, T., Zhong, W., Jafari, T., Du, S., He, J., Fu, Y.J., Singh, P., Suib, S. L., Siloxane D4 adsorption by mesoporous aluminosilicates, *Chem. Eng. J.*, 2016, 356-364.
43. Pahalegedara, M., Pahalegedara, L., He, J, Miao, R., Gottlieb, B., Rathnayake, D., Suib, S.L., Room Temperature Selective Reduction of Nitrobenzene to Azoxybenzene over Magnetically Separable Urchin-like Ni /Graphene Nanocomposites, *J. Catal.*, 2016, 336, 41-48.
44. Miao, R., Luo, Z., Zhong, W., Chen, S. Y., Jiang, T., Suib, S.L., Mesoporous TiO₂ Modified with Carbon Quantum Dots as a High-Performance Visible Light Photocatalyst, *Appl. Catal. B, Env.*, 2016, 189, 26-38.
45. Pahalagedara, M.N., Pahalagedara, L.R., Kriz, D., Chen, S.Y., Beaulieu, F., Thalaspitiya, W., Suib, S.L., Copper Aluminum Mixed Oxide (CuAl MO) Catalyst: A Green approach for the One-pot Synthesis of Imines under Solvent-free Conditions, *Appl. Catal. B*, 2016, 188, 227-234.
46. He, J., Liu, Y., Meng, Y., Sun, X., Biswas, S., Shen, M., Luo, Z., Miao, R., Zhang, L., Mustain, W.E., Suib, S.L., High-rate long-life of Li-ion batteries using reduced graphene oxide/Co₃O₄ as anode materials, *RSC Adv.*, 2016, 6, 24320 - 24330.
47. Ren, Z., Wu, Z., Song, W., Xiao, W., Guo, Y., Ding, J., Suib, S.L., Gao, P.X., Low Temperature Propane Oxidation over Co₃O₄ based Nano-array Catalysts: Ni Dopant Effect, Reaction Mechanism and Structural Stability, *Appl. Catal.*, 2016, 180, 150-160.

IMS MEMBER'S PUBLICATIONS

2015-16

LUYI SUN

1. Huang, X., Zeng, S., Liu, J., He, T., Sun, L., Xu, D., Yu, X., Luo, Y., Zhou, W., Wu, J., High-Performance Electrospun Poly(propylene carbonate)/Poly(vinylidene fluoride) Gel Polymer Electrolyte for Lithium Ion Batteries. *Journal of Physical Chemistry C* 2015, 119, 27882-27891.
2. Zhou, Y., Wang, A., Wang, Z., Chen, M., Wang, W., Sun, L., Liu, X., Titanium Functionalized α -Zirconium Phosphate Single Layer Nanosheets for Photocatalyst Applications. *RSC Advances* 2015, 5, 93969-93978.
3. Luo, G., Liu, W., Zeng, S., Zhang, C., Yu, X., Fang, Y., Sun, L., Hierarchical Mesoporous SnO₂@C@TiO₂ Nanochains for Anode Material of Lithium-ion Batteries with Excellent Cycling Stability. *Electrochimica Acta* 2015, 184, 219-225.
4. Luo, G., Lu, Y., Zeng, S., Zhong, S., Yu, X., Fang, Y., Sun, L., Synthesis of rGO-Fe₃O₄-SnO₂-C Quaternary Hybrid Mesoporous Nanosheets as a High-performance Anode Material for Lithium Ion Batteries. *Electrochimica Acta* 2015, 182, 715-722. (Highlighted as one of Key Scientific Articles in Renewable Energy Global Innovations, ISSN 2291-2460)
5. Huang, W., Zeng, S., Liu, J., Sun, L., Bi-axially Oriented Polystyrene/Montmorillonite Nanocomposite Films. *RSC Advances* 2015, 5, 58191-58198.
6. Yu, J., Xiang, L., Martin, B.R., Clearfield, A., Sun, L., Direct Growth of Layered Intercalation Compounds via Single Step One-pot in situ Synthesis. *Chemical Communications* 2015, 51, 11398-11400.
7. Zhou, Y., Brittain, A.D., Kong, D., Xiao, M., Meng, Y., Sun, L., Derivatization of Diamondoids for Functional Applications. *Journal of Materials Chemistry C* 2015, 3, 6947-6961.
8. Li, Y., Lan, J.Y., Liu, L., Yu, J., Luo, Z., Wang, W., Sun, L., Synthesis of Gold Nanoparticles on Rice Husk Silica for Catalysis Applications. *Industrial & Engineering Chemistry Research* 2015, 54, 5656-5663.
9. Wang, Z., Zeng, S., Yu, J., Ji, X., Zeng, H., Xin, S., Wang, Y., Sun, L., Size/Morphology Induced Tunable Luminescence in Upconversion Crystals: Ultra-Strong Single-Band Emission and Underlying Mechanisms. *Nanoscale*, 2015, 7, 9552-9557. (Highlighted in Nanowerk, a leading nanotechnology portal)
10. Yu, J., Martin, B.R., Clearfield, A., Luo, Z., Sun, L., One-Step Direct Synthesis of Layered Double Hydroxide Single Layer Nanosheets. *Nanoscale*, 2015, 7, 9448-9451. (Designated by Nanoscale as a "Hot Paper")
11. Ding, D., Yan, X., Zhang, X., He, Q., Qiu, B., Jiang, D., Wei, H., Guo, J., Umar, A., Sun, L., Wang, Q., Khan, M.A., Young, D.P., Ho, T.C., Guo, Z., Wei, S., Preparation and Enhanced Properties of Fe₃O₄ Nanoparticles Reinforced Polyimide Nanocomposites. *Superlattices and Microstructures* 2015, 85, 305-320.
12. Zhang, X., Yan, X., He, Q., Wei, H., Long, J., Guo, J., Gu, H., Yu, J., Liu, J., Ding, D., Sun, L., Wei, S., Guo, Z., Electrically Conductive Polypropylene Nanocomposites with Negative Permittivity at Low Carbon Nanotube Loading Levels. *ACS Applied Materials & Interfaces* 2015, 7, 6125-6138.
13. Zeng, H., Ji, X., Liu, Z., Ye, J., Dai, Y., Wang, Z., Sun, L., Second harmonic generations of ferroelastic β '-Dy₂(MoO₄)₃ crystal in glass induced by femtosecond laser irradiation. *Science of Advanced Materials* 2015, 7, 1843-1847.
14. Wang, Z., Li, Y., Ji, X., Zeng, H., Ci, Z., Sun, L., Visible Upconversion and Magnetic Properties of NaGd(WO₄)₂: Er³⁺, Yb³⁺ Nanoparticles. *Science of Advanced Materials* 2015, 7, 1838-1842.

IMS MEMBER'S PUBLICATIONS

2015-16

15. Wang, Z., Zeng, H., Sun, L., Graphene quantum dots: versatile photoluminescence for energy, biomedical, and environmental applications. *Journal of Materials Chemistry C*. 2015, 3, 1157-1165. (Invited review article, designated as one of 2015 *Journal of Materials Chemistry C* Hot Articles, frequently listed as one of the most downloaded articles)
16. Owens, D., Han, A., Sun, L., Mao, Y., Synthesis of VTMS(X)-HMS-3 mesoporous ordered silica for hydrogen storage. *International Journal of Hydrogen Energy*. 2015, 40, 2736-2741.
17. Liu, Y., Wang, Z., Zeng, H., Chen, C., Liu, J., Sun, L., Wang, W., Photoluminescent mesoporous carbon-doped silica from rice husks. *Materials Letter* 2015, 142, 280-282.
18. Wang, Z., Chen, H., Xu, L., Xu, S., Cao, F.C., Oliphant, A.J., Liu, J., Lu, Y., Sun, L., Synthesis and Color Prediction of Stable Pigments from Rice Husk Biomass. *Green Materials* 2015, 3, 10-14.
19. Zhou, Y., Liu, J., Xiao, M., Meng, Y., Sun, L., Designing Supported Ionic Liquids (ILs) within Inorganic Nanosheets for CO₂ Capture Applications. *ACS Applied Materials & Interfaces* 2016, 8, 5547-5555.
20. Wang, Z., Yu, J., Zhang, X., Li, N., Liu, B., Li, Y., Wang, Y., Wang, W., Li, Y., Zhang, L., Dissanayake, S., Suib, S.L., Sun, L., Large-Scale and Controllable Synthesis of Graphene Quantum Dots from Rice Husk Biomass: A Comprehensive Utilization Strategy. *ACS Applied Materials & Interfaces* 2016, 8, 1434-1439. (Highlighted in Nanowerk, a leading nanotechnology portal)
21. Wang, A., Zhou, Y., Wang, Z., Chen, M., Sun, L., Liu, X., Titanium Incorporated with UiO-66(Zr)-type Metal-Organic Framework (MOF) for Photocatalytic Application. *RSC Advances* 2016, 6, 3671-3679.
22. He, Q., Yuan, T., Wang, Y., Wei, S., Zhang, G., Liu, J., Yu, J., Sun, L., Young, D., Lin, H., Khasanov, A., Guo, Z., Manipulating Dimensional Assembly Pattern and Crystalline Structure of Iron Oxide Nanostructures with Functional Polyolefin. *Nanoscale* 2016, 8, 1915-1920.

MEI WEI

1. Sun, S-P., Wei, M., Oldsn, J.R., Shaw, M.T., A modified pultrusion process for preparing composites reinforced with continuous fibers and aligned hydroxyapatite nano needles. *Polymer Composites*, 36, 931-38, 2015.
2. Villa, M.M., Huang, J., Wang, L., Rowe, D.W., Wei, M., Bone tissue engineering with a collagen-hydroxyapatite scaffold and culture expanded bone marrow stromal cells. *Journal of Biomedical Materials Research: Part B - Applied Biomaterials*, 103, 243-53, 2015.
3. Bendtsen, S.T., Wei, M., Synthesis and characterization of a novel injectable alginate-collagen-hydroxyapatite hydrogel for bone tissue regeneration. *Journal of Materials Chemistry B*, 3, 3081-3090, 2015.
4. Zilm, M., Thomson, S., Wei, M., A comparative study of the sintering behavior of pure and manganese-substituted hydroxyapatite. *Materials*, 8, 6419-6436, 2015.
5. Villa, M.M., Wang, L., Huang, J., Rowe, D.W., Wei, M. Improving the permeability of lyophilized collagen-hydroxyapatite scaffolds for cell-based bone regeneration with a gelatin porogen. *Journal of Biomedical Materials Research B*, 2015, doi: 10.1002/jbm.b.33387.

IMS MEMBER'S PUBLICATIONS

2015-16

6. Hu, C., Zilm, M., Wei, M., Fabrication of Intrafibrillar and extrafibrillar mineralized collagen/apatite scaffolds with a hierarchical structure. *Journal of Biomedical Materials Research Part A*, 104, 1153-1161, 2016.
7. Clearfield, D., Wei, M., Investigation of Structural Collapse in Unidirectionally Freeze Cast Collagen Scaffolds. *J Mater Sci Mater Med*, 27, 15, 2016.

DIANYUN ZHANG

1. Zhang, D., Waas, A. M., Yen, C. F., "Progressive damage and failure response of hybrid 3D textile composites subjected to flexural loading, Part I: Experimental Studies," *International Journal of Solids and Structures*, 75-76, 2015, pp. 309-320.
2. Zhang, D., Waas, A. M., Yen, C. F., "Progressive damage and failure response of hybrid 3D textile composites subjected to flexural loading, Part II: Mechanics based multiscale computational modeling of progressive damage and failure," *International Journal of Solids and Structures*, 75-76, 2015, pp. 321-335.
3. Zhang, D., Waas, A. M., and Yen, C. F., "Progressive damage and failure responses of hybrid 3D textile composites subjected to dynamic flexural loading," *American Society for Composites 30th Technical Conference*, East Lansing, Michigan, September 28-30, 2015.
4. Zhang, D., Meyer, P., and Waas, A. M., "Effect of notch on the failure response of oxide/oxide ceramic composites," *57th AIAA/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, AIAA SciTech, San Diego, California, January 4-8, 2016, AIAA 2016-0733.

WEI ZHANG

1. Zhang, W., Zhu, J., Liu, H.J., and Niu, H.W. (2015). "Probabilistic capacity assessment of lattice transmission towers under strong wind." *Frontiers in Built Environment*. 1:20.
2. Zhang, W., Ge, Y.J., Cai, C. S. (2015). "Application of snapshot POD analysis in extracting flow structures around bridge decks." *Advances in Structural Engineering*, 18(6), 803-815. June 2015.
3. Zhu, J., Zhang, W. (2015). "Coupled analysis of multi-impact energy harvesting from low-frequency wind induced vibrations." *Smart Materials and Structures*, 24,045007.
4. Cai, C. S., Hu, J.X., Chen, S.R., Zhang, W., and Kong, X. (2015). "A coupled wind-vehicle-bridge system and its applications." *Wind and Structures*, 20(2), 117-142.
5. Zhu, J., Zhang, W., Zheng, K.F., and Li, H.G. (2016). "Seismic design of a long span cable-stayed bridge with fluid viscous dampers." *ASCE Practice Periodical on Structural Design and Construction*, 21 (1):04015006.
6. Yin, X.F., Liu, Y., Guo, S.H., Zhang, W., and Cai, C.S. (2016). "Three-dimensional vibration of a suspension bridge under stochastic traffic flows and road roughness." *International Journal for Structural Stability and Dynamics*, Vol. 16(2016): 1550038.

IMS MEMBER'S PUBLICATIONS

2015-16

JING ZHAO

1. Fu, K., Chen, S., Zhao, J., and Willis, B.G., "Dielectrophoretic Assembly of Gold Nanoparticles in Nanoscale Junctions for Rapid, Miniature Chemiresistor Vapor Sensors", ACS Sensors, 2016, ASAP.
2. Dey, S., Chen, S., Thota, S., Shakil, Md R., Suib, S.L., and Zhao, J., "Effect of Gradient Alloying on Photoluminescence Blinking of Single CdS_xSe_{1-x}Nanocrystals", Journal of Physical Chemistry C, 2016, ASAP.
3. Chen, S., Thota, S., Reggiano, G., and Zhao, J., "Generalized Seeded Growth of Ag-based Metal Chalcogenide Nanorods via Controlled Chalcogenization of the Seeds", Journal of Materials Chemistry C, 2015, 3, 11842-11849.
4. Thota, S., Chen, S., Zhou, Y., Zhang, Y., Zou, S., and Zhao, J., "Structural Defects Induced Peak Splitting in Gold-Copper Bimetallic Nanorods during Growth by Single Particle Spectroscopy", Nanoscale, 2015, 7, 14652-14658.
5. Sun, X., Liu, Y., Shaw, G., Carrier, A., Dey, S., Zhao, J., and Lei, Y., "Fundamental Study of Electrospun Pyrene-Polyethersulfone Nanofibers Using Mixed Solvents for Sensitive and Selective Explosives Detection in Aqueous Solution", ACS Applied Materials & Interfaces, 2015, 7 (24), 13189-13197.
6. Dey, S., Zhou, Y., Tian, X., Jenkins, J.A., Chen, O., Zou, S., and Zhao, J., "An experimental and theoretical mechanistic study of biexciton quantum yield enhancement in single quantum dots near gold nanoparticles", Nanoscale, (2015), 7, 6851 – 6858.
7. Dey, S., Zhou, Y., Tian, X., Jenkins, J.A., Chen, O., Zou, S., and Zhao, J., "An experimental and theoretical mechanistic study of biexciton quantum yield enhancement in single quantum dots near gold nanoparticles", Nanoscale, (2015), 7, 6851 – 6858.