Juan C. Noveron, Ph. D.

Associate Professor

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Education

2001 – 2003 Ruth L. Kirschstein NIH Postdoctoral Fellow, University of Utah
Department of Chemistry and Biochemistry
Mentor: Dr. Peter J. Stang

2000 Ph.D. Chemistry – University of California Santa Cruz
Department of Chemistry and Biochemistry
Dissertation title: "Synthesis and Characterization of Functional and Structural Analogues of the Active Sites of the Fe- and Co-containing Nitrile Hydratases"
Mentor: Dr. Pradip K. Mascharak

1993 B.A. Chemistry – California State University Long Beach
Department of Chemistry and Biochemistry
Project title: "Electronic Properties of Fe-porphyrin Carbon Monoxide Complexes"
Mentor: Dr. Marco Lopez

Positions

2015 – 2021 Ralph & Kathleen Ponce de Leon Professor; Chemistry; The University of Texas at El Paso, Department of Chemistry and Biochemistry

2014 – 2019 Director of the USDA I-Discover Program – a consortium of three universities – the University of Texas at El Paso, New Mexico State University, and the University of Texas at San Antonio – to integrate research and education in sustainability science

2009 – Associate Professor; Chemistry; The University of Texas at El Paso, Department of Chemistry and Biochemistry

2003 – 2008 Assistant Professor; Chemistry; The University of Texas at El Paso, Department of Chemistry and Biochemistry

2001 – 2003 Postdoctoral Research Associate; Ruth L. Kirschstein NIH Postdoctoral Fellowship, University of Utah, Department of Chemistry and Biochemistry

1994 – 2000 Research Assistant, GAANN Fellowship; Chemistry, University of California Santa Cruz, Department of Chemistry and Biochemistry

1990 – 1993 Research Assistant, NIH MARC MBRS Fellowship; Chemistry, California State University Long Beach, Department of Chemistry and Biochemistry

Honors

2023	Fulbright Scholar Award
2018	Member of the UTEP Academy of Distinguished Teachers
2015	Ralph & Kathleen Ponce de Leon Professorship
2015	Member of the University of Texas System Academy of Distinguished Teachers
2013	COURI Faculty Mentor Award
2009	University of Texas System Regents' Outstanding Teaching Award
2008	National Science Foundation CAREER Award
2001	Ruth L. Kirschstein NIH Postdoctoral Fellowship Award
1998	Distinguished Service Award, University of California Santa Cruz
1990	NIH MARC MBRS – Undergraduate Fellowship

Publications

PUBLICATIONS (77), PATENTS (4), PRESENTATIONS (250+)

Peer-reviewed Publications

Published

(77) Sultana, K.A.; Hernandez Ortega, J.; Islam, M.T.; Dorado, Z.N.; Alvarado-Tenorio, B.; Galindo-Esquivel, I.R.; Noveron, J.C. Saccharide-Derived Zinc Oxide Nanoparticles with High Photocatalytic Activity for Water Decontamination and Sanitation. *Sustain. Chem*. **2023**, 4, 321-338. https://doi.org/10.3390/suschem4040023

(76) Hernandez-Ortega, J.; Casillas, R.; Mohan, N.; Sirimulla, S.; Noveron, J. C. Theoretical prediction of superatom molecular orbitals (SAMOs) in the ice-like cluster $(H_2O)_{10}$ and its impact in the supramolecular chemistry and function of nanostructured water. *Chemical Physics Impact* **2022**, 5, 100128. DOI: https://doi.org/10.1016/j.chphi.2022.100128

(75) Ahsan, Md Ariful, Tianwei He, Kamel Eid, Aboubakr M. Abdullah, Mohamed Fathi Sanad, Ali Aldalbahi, Bonifacio Alvarado-Tenorio, Aijun Du, Alain R. Puente Santiago, and Juan C. Noveron. "Controlling the Interfacial Charge Polarization of MOF-Derived 0D–2D VdW Architectures as a Unique Strategy for Bifunctional Oxygen Electrocatalysis." *ACS Applied Materials & Interfaces,* **2022**, 14, no. 3: 3919–29. https://doi.org/10.1021/acsami.1c17283

(74) Ahsan, Md Ariful, Tianwei He, Juan C. Noveron, Karsten Reuter, Alain R. Puente-Santiago, and Rafael Luque. "Low-Dimensional Heterostructures for Advanced Electrocatalysis: An Experimental and Computational Perspective." *Chemical Society Reviews*, **2022**, 51, no. 3: 812–28. https://doi.org/10.1039/D1CS00498K

(73) Fallas, P.; Quesada Kimzey, J.; Hundi, P.; Islam, Md; Noveron, J.C.; Alvarez, P.; Shahsavari, R., Combinatorial analysis of sparse experiments on photocatalytic performance of cement composites: A route towards optimizing multifunctional materials for water purification. *Langmuir*, **2021**, DOI: 10.1021/acs.langmuir.1c00654

(72) Xu, C., Puente-Santiago, A. R., Rodríguez-Padrón, D., Muñoz-Batista, M. J., Ahsan, M. A., Noveron, J. C., & Luque, R. Nature-inspired hierarchical materials for sensing and energy storage applications, *Chemical Society Reviews*, **2021**, DOI: 10.1039/C8CS00652K

(71) Ahsan, M. A.; He, T.; Eid, K.; Abdullah, A. M.; Curry, M. L.; Du, A.; Puente Santiago, A. R.; Echegoyen, L.; Noveron, J. C. Tuning the Intermolecular Electron Transfer of Low-Dimensional and Metal-Free BCN/C60 Electrocatalysts via Interfacial Defects for Efficient Hydrogen and Oxygen Electrochemistry. *Journal of the American Chemical Society,* **2021**. DOI:10.1021/jacs.0c12386

(70) Ahsan, M. A.; Santiago, A. R. P.; Sanad, M. F.; Weller, J. M.; Fernandez-Delgado, O.; Barrera, L. A.; Maturano-Rojas, V.; Alvarado-Tenorio, B.; Chan, C. K.; Noveron, J. C. Tissue paper-derived porous carbon encapsulated transition metal nanoparticles as advanced non-precious catalysts: Carbon-shell influence on the electrocatalytic behavior. *Journal of Colloid and Interface Science* **2021**, *581*, 905-918. DOI:10.1016/j.jcis.2020.08.012

(69) Sultana, K. A.; Islam, T.; Silva, J. A.; Turley, R. S.; Hernandez-Viezcas, J. A.; Gardea-Torresdey, J. L.; Noveron, J. C. Sustainable synthesis of zinc oxide nanoparticles for photocatalytic degradation of organic pollutant and generation of hydroxyl radical. *Journal of Molecular Liquids* **2020**, 112931. DOI:10.1016/j.molliq.2020.112931

(68) Díaz-Moreno, C. A.; Khanal, N.; Macías, A. H.; Noveron, J.; López, J. A. Structural and second harmonic generation properties of nanogel of niobium oxide nanoparticles. *Materials Chemistry and Physics* **2020**, *255*, 123579. DOI:10.1016/j.matchemphys.2020.123579

(67) Cleetus, C. M.; Alvarez Primo, F.; Fregoso, G.; Lalitha Raveendran, N.; Noveron, J. C.; Spencer, C. T.; Ramana, C. V.; Joddar, B. Alginate Hydrogels with Embedded ZnO Nanoparticles for Wound Healing Therapy. *International Journal of Nanomedicine* **2020**, *15*, 5097-5111. DOI:10.2147/IJN.S255937

(66) Breister, A. M.; Imam, M. A.; Zhou, Z.; Ahsan, M. A.; Noveron, J. C.; Anantharaman, K.; Prabhakar, P. Soil microbiomes mediate degradation of vinyl ester-based polymer composites. *Nature Communications Materials* **2020**, *1*, 1-15. DOI:10.1038/s43246-020-00102-1

(65) Barrera, L. A.; Escobosa, A. C.; Nevarez, A.; Ahsan, M. A.; Alsaihati, L. S.; Noveron, J. C. Nanoparticle-templated conversion of glucose to a high surface area biocarbon for the removal of organic pollutants in water. *Water Sci Technol* **2020**, *82*, 1370-1379. DOI:10.2166/wst.2020.410

(64) Ahsan, M. A.; Santiago, A. R. P.; Rodriguez, A.; Maturano-Rojas, V.; Alvarado-Tenorio, B.; Bernal, R.; Noveron, J. C. Biomass-derived ultrathin carbon-shell coated iron nanoparticles as high-performance tri-functional HER, ORR and Fenton-like catalysts. *Journal of Cleaner Production* **2020**, *275*, 124141. DIO:10.1016/j.jclepro.2020.124141

(63) Ahsan, M. A.; Santiago, A. R. P.; Nair, A. N.; Weller, J. M.; Sanad, M. F.; Valles-Rosales, D. J.; Chan, C. K.; Sreenivasan, S.; Noveron, J. C. Metal-Organic frameworks-derived multifunctional carbon encapsulated metallic nanocatalysts for catalytic peroxymonosulfate activation and electrochemical hydrogen generation. *Molecular Catalysis* **2020**, *498*, 111241. DOI:10.1016/j.mcat.2020.111241

(62) Ahsan, M. A.; Puente Santiago, A. R.; Hong, Y.; Zhang, N.; Cano, M.; Rodriguez-Castellon, E.; Echegoyen, L.; Sreenivasan, S. T.; Noveron, J. C. Tuning of Trifunctional NiCu Bimetallic Nanoparticles Confined in a Porous Carbon Network with Surface Composition and Local Structural Distortions for the Electrocatalytic

Oxygen Reduction, Oxygen and Hydrogen Evolution Reactions. *Journal of the American Chemical Society* **2020**, *142*, 14688-14701. DOI:10.1021/jacs.0c06960

(61) Ahsan, M. A.; Jabbari, V.; Imam, M. A.; Castro, E.; Kim, H.; Curry, M. L.; Valles-Rosales, D. J.; Noveron, J. C. Nanoscale nickel metal organic framework decorated over graphene oxide and carbon nanotubes for water remediation. *Sci Total Environ* **2020**, *698*, 134214. DOI:10.1016/j.scitotenv.2019.134214

(60) Ahsan, M. A.; Imam, M. A.; Santiago, A. R. P.; Rodriguez, A.; Alvarado-Tenorio, B.; Bernal, R.; Luque, R.; Noveron, J. C. Spent tea leaves templated synthesis of highly active and durable cobalt-based trifunctional versatile electrocatalysts for hydrogen and oxygen evolution and oxygen reduction reactions. *Green Chemistry* **2020**, *22*, 6967-6980. DOI:10.1039/D0GC02155E

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(57) Islam, M. T.; Rosales, J. A.; Saenz-Arana, R.; Ghadimi, S. J.; Noveron, J. C. Rapid synthesis of ultrasmall platinum nanoparticles supported on macroporous cellulose fibers for catalysis. *Nanoscale Advances* **2019**, *1*, 2953-2964. DOI:10.1039/C9NA00124G

(56) Islam, M. T.; Rosales, J.; Saenz-Arana, R.; Arrieta, R.; Kim, H.; Sultana, K. A.; Lin, Y.; Villagran, D.; Noveron, J. C. Synthesis of high surface area transition metal sponges and their catalytic properties. *New Journal of Chemistry* **2019**, *43*, 10045-10055. DOI:10.1039/C9NJ02096A

(55) Islam, M. T.; Hyder, A. G.; Saenz-Arana, R.; Hernandez, C.; Guinto, T.; Ahsan, M. A.; Alvarado-Tenorio, B.; Noveron, J. C. Removal of methylene blue and tetracycline from water using peanut shell derived adsorbent prepared by sulfuric acid flux. *Journal of Environmental Chemical Engineering* **2019**, *7*, 102816. DOI:10.1016/j.jece.2018.102816

(54) Islam, M. T.; Dominguez, A.; Alvarado-Tenorio, B.; Bernal, R. A.; Montes, M. O.; Noveron, J. C. Sucrose-Mediated Fast Synthesis of Zinc Oxide Nanoparticles for the Photocatalytic Degradation of Organic Pollutants in Water. *ACS Omega* **2019**, *4*, 6560-6572. DOI:10.1021/acsomega.9b00023

(53) Barrera, L. A.; Escobosa, A. C.; Nevarez, A.; Dominguez, N.; Bañuelos, J. L.; Westerhoff, P.; Noveron, J. C. TiO2-carbon nanoporous composites prepared via ZnO nanoparticle-templated carbonization of glucose adsorb and photodegrade organic pollutants in water. *Journal of Water Process Engineering* **2019**, *28*, 331-338. DOI:10.1016/j.jwpe.2019.02.007

(52) Ahsan, M. A.; Jabbari, V.; El-Gendy, A. A.; Curry, M. L.; Noveron, J. C. Ultrafast catalytic reduction of environmental pollutants in water via MOF-derived magnetic Ni and Cu nanoparticles encapsulated in porous carbon. *Applied Surface Science* **2019**, *497*, 143608. DOI:10.1016/j.apsusc.2019.143608

(51) Ahsan, M. A.; Fernandez-Delgado, O.; Deemer, E.; Wang, H.; El-Gendy, A. A.; Curry, M. L.; Noveron, J. C. Carbonization of Co-BDC MOF results in magnetic C@ Co nanoparticles that catalyze the reduction of methyl orange and 4-nitrophenol in water. *Journal of Molecular Liquids* **2019**, *290*, 111059. DOI:10.1016/j.molliq.2019.111059

(50) Ahsan, M. A.; Deemer, E.; Fernandez-Delgado, O.; Wang, H.; Curry, M. L.; El-Gendy, A. A.; Noveron, J. C. Fe nanoparticles encapsulated in MOF-derived carbon for the reduction of 4-nitrophenol and methyl orange in water. *Catalysis Communications* **2019**, *130*, 105753. DOI:10.1016/j.catcom.2019.105753

(49) Pardo, A.; Garcia, H.; Ramirez, P.; Carrillo-Alvarado, M. A.; Krishna, K. S.; Dominguez, N.; Islam, M. T.; Wang, H.; Noveron, J. C. Self-regenerating photocatalytic hydrogel for the adsorption and decomposition of methylene blue and antibiotics in water. *Environmental technology & innovation* **2018**, *11*, 321-327. DOI:10.1016/j.eti.2018.06.005

(48) Islam, M. T.; Saenz-Arana, R.; Wang, H.; Bernal, R.; Noveron, J. C. Green synthesis of gold, silver, platinum, and palladium nanoparticles reduced and stabilized by sodium rhodizonate and their catalytic reduction of 4-nitrophenol and methyl orange. *New Journal of Chemistry* **2018**, *42*, 6472-6478. DOI:10.1039/C8NJ01223G

(47) Islam, M. T.; Saenz-Arana, R.; Hernandez, C.; Guinto, T.; Ahsan, M. A.; Kim, H.; Lin, Y.; Alvarado-Tenorio, B.; Noveron, J. C. Adsorption of methylene blue and tetracycline onto biomass-based material prepared by sulfuric acid reflux. *RSC advances* **2018**, *8*, 32545-32557. DOI:10.1039/C8RA05395B

(46) Islam, M. T.; Saenz-Arana, R.; Hernandez, C.; Guinto, T.; Ahsan, M. A.; Bragg, D. T.; Wang, H.; Alvarado-Tenorio, B.; Noveron, J. C. Conversion of waste tire rubber into a high-capacity adsorbent for the removal of methylene blue, methyl orange, and tetracycline from water. *Journal of Environmental Chemical Engineering* **2018**, *6*, 3070-3082. DOI:10.1016/j.jece.2018.04.058

(45) Islam, M. T.; Jing, H.; Yang, T.; Zubia, E.; Goos, A. G.; Bernal, R. A.; Botez, C. E.; Narayan, M.; Chan, C. K.; Noveron, J. C. Fullerene stabilized gold nanoparticles supported on titanium dioxide for enhanced photocatalytic degradation of methyl orange and catalytic reduction of 4-nitrophenol. *Journal of environmental chemical engineering* **2018**, *6*, 3827-3836. DOI:10.1016/j.jece.2018.05.032

(44) Dominguez, N.; Torres, B.; Barrera, L. A.; Rincon, J. E.; Lin, Y.; Chianelli, R. R.; Ahsan, M. A.; Noveron, J. C. Bimetallic CoMoS composite anchored to biocarbon fibers as a high-capacity anode for Li-ion batteries. *ACS omega* **2018**, *3*, 10243-10249. DOI:10.1021/acsomega.8b00654

(43) Barrera, L. A.; Escobosa, A. C.; Alsaihati, L. S.; Noveron, J. C. Conducting a Low-Waste Iodine Clock Experiment on Filter Paper To Discern the Rate Law. *Journal of Chemical Education* **2018**, *96*, 165-168. DOI:10.1021/acs.jchemed.8b00458

(42) Arroyo, I. Z.; Gomez, C.; Alarcon, H.; Jimenez, A.; Pardo, A.; Montano, G.; Armijos, R. X.; Noveron, J. C. Alkyl Length Effects on the DNA Transport Properties of Cu (II) and Zn(II) Metallovesicles: An In Vitro and In Vivo Study. *J Drug Deliv* **2018**, *2018*, 2851579. DOI:10.1155/2018/2851579

(41) Ahsan, M. A.; Jabbari, V.; Islam, M. T.; Kim, H.; Hernandez-Viezcas, J. A.; Lin, Y.; Díaz-Moreno, C. A.; Lopez, J.; Gardea-Torresdey, J.; Noveron, J. C. Green synthesis of a highly efficient biosorbent for organic, pharmaceutical, and heavy metal pollutants removal: Engineering surface chemistry of polymeric biomass of spent coffee waste. *Journal of Water Process Engineering* **2018**, *25*, 309-319. DOI:10.1016/j.jwpe.2018.08.005

(40) Ahsan, M. A.; Islam, M. T.; Imam, M. A.; Hyder, A. G.; Jabbari, V.; Dominguez, N.; Noveron, J. C. Biosorption of bisphenol A and sulfamethoxazole from water using sulfonated coffee waste: Isotherm, kinetic and thermodynamic studies. *Journal of environmental chemical engineering* **2018**, *6*, 6602-6611. DOI:10.1016/j.jece.2018.10.004

(39) Ahsan, M. A.; Islam, M. T.; Hernandez, C.; Kim, H.; Lin, Y.; Curry, M. L.; Gardea-Torresdey, J.; Noveron, J. C. Adsorptive removal of sulfamethoxazole and bisphenol A from contaminated water using functionalized carbonaceous material derived from tea leaves. *Journal of environmental chemical engineering* **2018**, *6*, 4215-4225. DOI:10.1016/j.jece.2018.06.022

(38) Ahsan, M. A.; Islam, M. T.; Hernandez, C.; Castro, E.; Katla, S. K.; Kim, H.; Lin, Y.; Curry, M. L.; Gardea-Torresdey, J.; Noveron, J. C. Biomass conversion of saw dust to a functionalized carbonaceous materials for the removal of Tetracycline, Sulfamethoxazole and Bisphenol A from water. *Journal of environmental chemical engineering* **2018**, *6*, 4329-4338. DOI:10.1016/j.jece.2018.06.040

(37) Torres, I.; Ruiz, M.; Phan, H.; Dominguez, N.; Garcia, J.; Nguyen, T.-Q.; Evans, H.; Resendiz, M.J.; Baruah, T.; Metta, A.; et al. Mesomorphic Behavior in Silver(I) N-(4-Pyridyl) Benzamide with Aromatic π–π Stacking Counterions. *Materials* **2018**, 11, 1666. https://doi.org/10.3390/ma11091666

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(35) Islam, M.T.; Hernandez, C.; Ahsan, M.A.; Pardo, A.; Wang, H.; Noveron, J.C. Sulfonated resorcinol-formaldehyde microspheres as high-capacity regenerable adsorbent for the removal of organic dyes from water. *J. Environ. Chem. Eng*., **2017**, *5*, 5270 - 5279. DOI:10.1016/j.jece.2017.10.003

(34) Islam, M. T., Dominguez, N., Ahsan, Md A., Dominguez-Cisneros, H., Noveron, J.C. Sodium rhodizonate induced formation of gold nanoparticles supported on cellulose fibers for catalytic reduction of 4-nitrophenol and organic dyes. *J. Environ. Chem. Eng.*, **2017**, 5, 4185 - 4193. DOI:10.1016/j.jece.2017.08.017

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(27) Islam, Md. T., Molugu, S. K.; Cooke, P. H.; Noveron, J.C. Fullerene stabilized gold nanoparticles. *New Journal of Chemistry*, **2015**, *39*, 5923 - 5926. DOI:10.1039/C5NJ01367D

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