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Engineering & Scientific Consulting

Emily Saad, Ph.D.

Principal Scientist | Chemical Regulation and Food Safety
Sacramento
+1-916-306-2683 | esaad@exponent.com

Professional Profile

Dr. Emily Saad specializes in managing complex scientific and regulatory strategies, including those that require streamlined coordination of both a federal and state component. Dr. Saad has extensive experience with the United States Environmental Protection Agency (EPA) Office of Pesticide Programs (OPP) as well as state regulatory authorities. Additionally, Dr. Saad routinely works on matters that involve California regulatory authorities, including the Department of Pesticide Regulation (DPR), Department of Food and Agriculture (CDFA), Department of Public Health (CDPH), and the Office of Environmental Health Hazard Assessment (OEHHA).

Dr. Saad handles scientific and regulatory issues within the context of unique federal and state regulatory paradigms. Specifically, Dr. Saad routinely manages registration and post-registration strategies for pesticides, including new active ingredients (conventional pesticides and biopesticides), fertilizers, plant and soil amendments, biostimulants, adjuvants, and novel technologies, which span from consumer products to agricultural input products and include products and technologies eligible for use in organic production.

Dr. Saad has a strong scientific background in analytical chemistry and geochemistry. Her research has typically integrated both field- and laboratory-based projects. She has worked extensively on projects related to the presence and significance of nutrients and contaminants in soils and sediments, including transport, bioremediation, and environmental fate. She has also participated in investigations of contaminant provenance, not only identifying whether contamination in various ecosystems was anthropogenic or naturally occurring, but also constraining sources that may have contributed to the contamination.

Dr. Saad approaches projects with an analytical and technical geochemistry background as well as a passion for navigating US environmental regulations, in particular California's unique regulatory requirements.

Dr. Saad holds a Ph.D. in Earth and Atmospheric Sciences from the Georgia Institute of Technology, as well as a M.S. degree in Chemistry from Northern Arizona University and B.S. degree in Chemistry from the Georgia Institute of Technology.

Academic Credentials & Professional Honors

Ph.D., Earth and Atmospheric Sciences, Georgia Institute of Technology, 2017

M.S., Chemistry, Northern Arizona University, 2013

B.S., Chemistry, Georgia Institute of Technology, 2010

Prior Experience

Scientific Consultant, Technology Sciences Group, 2017-2018

Publications

Zhao S†, Saad EM†, Pickering RA, Liu P, Zuo H, Zhao L, Ingall E, Taillefert M, Reinhard CT, Dong H, Krause JW, Tang Y. Rapid transformation of biogenic silica to authigenic clay: Mechanisms and geochemical constraints. *Science Advances*. 2025, 11, eadt3374.

Ma CX, Liu H, Chen GC, Zhao Q, Guo HY, Monicha R, Long S, Tang YZ, Saad EM, DeLaTorreRoche R, White JC, Dhankher OP, Xing BS. Dual roles of glutathione in silver nanoparticle detoxification and enhancement of nitrogen assimilation in soybean (*Glycine max* L.). *Environmental Science: Nano*. 2020, 7, 1954-1966.

Saad EM, Pickering RA, Shoji K, Hossain MI, Glover TG, Krause JW, Tang YZ. Effect of cleaning method on the reactivity of diatom frustules. *Marine Chemistry*. 2020, 224, 1038262.

Jin QX, Saad EM, Zhang WL, Tang YZ, Kurtis K. Quantification of nitric oxide binding in plain and TiO₂-doped cementitious materials. *Cement and Concrete Research*. 2019, 251-256.

Zhao SL, Wang Q, Sun JY, Huang RX, Saad EM, Fields B, Borkiewicz OJ, Chen S, Zhu MQ, Tang YZ. Effect of Zn presence during mineral formation on the structure of Mn oxides. *Chemical Geology*. 2018, 234-245.

Zhao SL, Gonzalez-Valle YA, Saad EM, Elzinga EJ, Tang YZ. Zn presence during mineral formation affects the reductive transformation of birnessite. *Chemical Geology*. 2018, 12-19.

Zhao SL, Li CN, Liu P, Huang RX, Saad EM, Tang YZ. Zinc presence during mineral formation affects the sorptive reactivity of manganese oxide. *Soil Systems* (Invited article for Special Issue on Soil Processes Controlling Contaminant Dynamics). 2018, 2(2), 19.

Huang RX, Zhang B, Saad EM, Ingall E, Tang YZ. Speciation Evolution of Zinc and Copper during Pyrolysis and Hydrothermal Carbonization Treatments of Sewage Sludges. *Water Research*. 2018, 260-269.

Saad EM, Wang XL, Planavsky NJ, Reinhard CT, Tang YZ. Chromium isotope fractionation induced by ligand-promoted mobilization of Cr(III). *Nature Communications*. 2017, 8, 1590.

Saad EM, Sun JY, Chen S, Borkiewicz OJ, Zhu MQ, Duckworth O, Tang YZ. Siderophore and organic acid promoted dissolution and transformation of Cr(III)-Fe(III)-oxyhydroxides. *Environmental Science & Technology*. 2017, 51 (6), 3223-3232.

Chambers L, Ingall ED, Saad EM, Longo AF, Takeuchi M, Tang YZ, Benitez-Nelson C, Haley ST, Dyhrman ST, Brandes J, Stubbins A. Enhanced dissolved organic matter recovery from saltwater samples with electro dialysis. *Aquatic Geochemistry*. 2016, 555-572.

Saad EM, Longo AF, Chambers L, Huang RX, Benitez-Nelson C, Dyhrman ST, Diaz J, Tang YZ, Ingall E. Understanding marine dissolved organic matter production: Compositional insights from axenic cultures of *Thalassiosira pseudonana*. *Limnology and Oceanography*. 2016, 61, 2222-2233.

†These authors contributed equally to this work.

Presentations

Saad EM, Tang Y. Microbial metabolite promoted dissolution and transformation of mixed chromium(III)-

iron(III) (oxy)hydroxides. Oral presentation, Goldschmidt Geochemistry Conference, Yokohama, Japan, 2016

Saad EM, Sun J, Chen S, Borkiewicz OJ, Zhu M, Duckworth O, Tang Y. Microbial exudate promoted dissolution and transformation of chromium containing minerals. Oral presentation, American Chemical Society National Meeting, Denver, CO, 2016.

Saad EM, Wang X, Planavsky NJ, Reinhard CT, Tang Y. Isotope fractionation induced by ligand-promoted mobilization of Cr(III). Oral presentation, American Chemical Society National Meeting, Denver, CO, 2016.

Saad EM, Tang Y. Mineralogical constraint of reverse weathering reactions. Oral presentation, American Chemical Society National Meeting, Denver, CO, 2015.

Saad EM, Tang Y. Mineralogical constraint of reverse weathering reactions. Oral presentation, Southeastern Biogeochemistry Symposium, Atlanta, GA, 2015.

Saad EM, Ketterer ME. Elemental, isotopic and particle fingerprinting of dust sources in the San Francisco Peaks, Arizona. Oral presentation, Goldschmidt Geochemistry Conference, Sacramento, CA, 2014.

Saad EM, Ketterer ME. A multi-isotopic tracing study of dust provenance in montane soils using MC-ICPMS. Poster Presentation, Winter Conference on Plasma Spectrochemistry, Tuscon, AZ, 2012.