



Exponent®
Engineering & Scientific Consulting

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Professional Profile

Dr. Saad is a geochemist specializing in California regulatory science, including experience with 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). She handles scientific issues within the context of unique state regulatory policies.

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.

At Technology Sciences Group (TSG), Dr. Saad was a key scientist in their California (Davis) office. Dr. Saad worked on a broad range of issues, from chemistry and food safety issues to environmental fate and agricultural field trials. She has worked with clients on the many unique issues and challenges that arise out of California's approaches to regulation and science. She brings an analytical and technical geochemistry background as well as a passion for navigating California's environmental regulations to Exponent.

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

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 electrodialysis. *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.

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.