Stanford

Apurva Mehta

Senior Scientist, LCLS - Linac Coherent Light Source

Bio

BIO

I am a materials scientist with three decades of experience unraveling the molecular-scale processes that govern the functionality, aging, and failure of complex materials and devices. Over this time, advanced characterization methods have undergone a revolutionary transformation, driven by the emergence of brighter sources—from synchrotrons and X-ray free-electron lasers to MeV accelerator-based electron sources—paired with faster and larger-area detectors. While the depth and precision of measurements have vastly improved, the explosion of raw data now poses a significant challenge, making it increasingly difficult to extract meaningful insights them.

Recognizing this growing challenge, I have devoted the last decade to harnessing the power of emerging machine learning and artificial intelligence techniques to find breakthroughs. My focus has been on not only accelerating the extraction of knowledge from intricate, multi-dimensional, and often noisy measurements but also on making data collection smarter. By integrating these cutting-edge technologies, I aim to transform how we approach material science and deepen our understanding of material behavior and device performance.

CURRENT ROLE AT STANFORD

Head of Material Sciences Department

Linac Coherent Light Source

SLAC national accelerator lab

EDUCATION AND CERTIFICATIONS

- Visiting Scientist, Tata Institute of Fundamental Research
- Post-Doctoral Fellowship, Princeton University
- Ph.D., Lehigh University , Materials Science and Engineering (1990)

LINKS

- Publications: Google Scholar Citations: https://scholar.google.com/citations?user=sXrmPAsAAAAJ&hl=en

Publications

PUBLICATIONS

- **Multimode objective lens for momentum microscopy and x-ray photoemission electron microscopy: Experiments.** *The Review of scientific instruments*

  Tkach, O., Fragkos, S., Biswas, D., Liu, J., Fedchenko, O., Lytvynenko, Y., Babenkov, S., Zimmer, D., Nguyen, Q. L., Chernov, S., Kutnyakhov, D., Scholz, M., Wind, et al

2026; 97 (3)

- **Composition dependence of atomic order in strain-relaxed, metastable GeSn alloys** *PHYSICAL REVIEW MATERIALS*
  Lentz, J., Fridriksdottir, A., Woicik, J. C., Davis, R., Mehta, A., Mcintyre, P. C.
  2025; 9 (10)
- **Glass formation during combinatorial sputtering in binary alloys** *ACTA MATERIALIA*
  Huang, S., Kube, S. A., Johnson, N. S., Sohn, S., Mehta, A., Schroers, J.
  2025; 296
- **Active Learning for Rapid Targeted Synthesis of Compositionally Complex Alloys** *MATERIALS*
  Johnson, N. S., Mishra, A., Kirsch, D. J., Mehta, A.
  2024; 17 (16)
- **Superconducting phase diagram in BixNi1-x x Ni 1- x thin films: The effects of Bi stoichiometry on superconductivity** *PHYSICAL REVIEW MATERIALS*
  Park, J., Horn, J. A., Kirsch, D. J., Pant, R. K., Yoon, H., Baek, S., Sarker, S., Mehta, A., Zhang, X., Lee, S., Greene, R., Paglione, J., Takeuchi, et al
  2024; 8 (7)
- **Probabilistic Mixture Model-Based Spectral Unmixing** *APPLIED SCIENCES-BASEL*
  Hoidn, O., Mishra, A., Mehta, A.
  2024; 14 (11)
- **A Case Study of Multimodal, Multi-institutional Data Management for the Combinatorial Materials Science Community** *INTEGRATING MATERIALS AND MANUFACTURING INNOVATION*
  Allec, S. I., Muckley, E. S., Johnson, N. S., Borg, C. K. H., Kirsch, D. J., Martin, J., Pant, R., Takeuchi, I., Lee, A. S., Saal, J. E., Ward, L., Mehta, A.
  2024
- **A general indicator for the tolerance to impurities of metals and alloys** *MATERIALIA*
  Lund, E., Huang, S., Kube, S. A., Liu, G., Johnson, N., Colley, W., Mehta, A., Reck, B. K., Sohn, S., Schroers, J.
  2024; 33
- **Physics constrained unsupervised deep learning for rapid, high resolution scanning coherent diffraction reconstruction.** *Scientific reports*
  Hoidn, O., Mishra, A. A., Mehta, A.
  2023; 13 (1): 22789
- **Effects of elevated-temperature deposition on the atomic structure of amorphous Ta₂O₅ films** *APL MATERIALS*
  Prasai, K., Lee, K., Baloukas, B., Cheng, H., Fazio, M., Martinu, L., Mehta, A., Menoni, C. S., Schiettekatte, F., Shink, R., Shyam, B., Vajente, G., Fejer, et al
  2023; 11 (12)
- **Tuning In-Plane Magnetic Anisotropy and Interfacial Exchange Coupling in Epitaxial La_{2/3}Sr_{1/3}CoO₃/La_{2/3}Sr_{1/3}MnO₃ Heterostructures** *ACS APPLIED MATERIALS & INTERFACES*
  Feng, M., Ahlm, N., Sasaki, D. Y., Chiu, I., N'Diaye, A. T., Shafer, P., Klewe, C., Mehta, A., Takamura, Y.
  2023; 15 (45): 53086-53095
- **Two Pathways for the Degradation of Orpiment Pigment (As2S3) Found in Paintings** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Broers, F. T. H., Janssens, K., Weker, J., Webb, S. M., Mehta, A., Meirer, F., Keune, K.
  2023; 145 (16): 8847-8859
- **Magnetic phase diagram mapping in Fe1-xRhx composition-spread thin films** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*
  Yu, H., Gao, T., N'Diaye, A. T., Arenholz, E., Sarker, S., Mehta, A., Zhang, X., Takeuchi, I.
  2023; 41 (2)
- **Local ordering in Ge/Ge-Sn semiconductor alloy core/shell nanowires revealed by extended x-ray absorption fine structure (EXAFS)** *APPLIED PHYSICS LETTERS*
  Lentz, J., Woicik, J. C., Bergschneider, M., Davis, R., Mehta, A., Cho, K., McIntyre, P. C.
  2023; 122 (6)
- **Author Correction: Discovery of LaAlO3 as an efficient catalyst for two-electron water electrolysis towards hydrogen peroxide.** *Nature communications*

Baek, J., Jin, Q., Johnson, N. S., Jiang, Y., Ning, R., Mehta, A., Siahrostami, S., Zheng, X.
2022; 13 (1): 7685

- **Discovery of LaAlO3 as an efficient catalyst for two-electron water electrolysis towards hydrogen peroxide.** *Nature communications*
  Baek, J., Jin, Q., Johnson, N. S., Jiang, Y., Ning, R., Mehta, A., Siahrostami, S., Zheng, X.
  2022; 13 (1): 7256

- **Strain- and thickness-dependent magnetic properties of epitaxial La_{0.67}Sr_{0.33}CoO₃/La_{0.67}Sr_{0.33}MnO₃ bilayers** *JOURNAL OF APPLIED PHYSICS*
  Feng, M., Ahlm, N. J., Kane, A. M., Chiu, I., Sasaki, D. Y., Shafer, P., N'Diaye, A. T., Mehta, A., Takamura, Y.
  2022; 132 (19)

- **Nanocrystallite Seeding of Metastable Ferroelectric Phase Formation in Atomic Layer-Deposited Hafnia-Zirconia Alloys.** *ACS applied materials & interfaces*
  Yu, Z., Saini, B., Liu, Y., Huang, F., Mehta, A., Baniecki, J. D., Wong, H. P., Tsai, W., McIntyre, P. C.
  2022

- **Atomic-Layer-Deposited Aluminum Oxide Thin Films Probed with X-ray Scattering and Compared to Molecular Dynamics and Density Functional Theory Models** *ACS OMEGA*
  Pugliese, A., Shyam, B., Repa, G. M., Nguyen, A., Mehta, A., Webb, E. B., Fredin, L. A., Strandwitz, N. C.
  2022; 7 (45): 41033-41043

- **Machine learned synthesizability predictions aided by density functional theory** *COMMUNICATIONS MATERIALS*
  Lee, A., Sarker, S., Saal, J., Ward, L., Borg, C., Mehta, A., Wolverton, C.
  2022; 3 (1)

- **Thin-Film Paradigm to Probe Interfacial Diffusion during Solid-State Metathesis Reactions** *CHEMISTRY OF MATERIALS*
  McAuliffe, R. D., Huang, G., Montiel, D., Mehta, A., Davis, R. C., Petrova, V., Browning, K. L., Neilson, J. R., Liu, P., Thornton, K., Veith, G. M.
  2022; 34 (14): 6279-6287

- **Giant Orbital Anisotropy with Strong Spin-Orbit Coupling Established at the Pseudomorphic Interface of the Co/Pd Superlattice.** *Advanced science (Weinheim, Baden-Wurttemberg, Germany)*
  Kim, S., Pathak, S., Rhim, S. H., Cha, J., Jekal, S., Hong, S. C., Lee, H. H., Park, S., Lee, H., Park, J., Lee, S., Steinruck, H., Mehta, et al
  2022: e2201749

- **Mapping Thermoelectric Transport in a Multicomponent Alloy Space** *ADVANCED ELECTRONIC MATERIALS*
  Gurunathan, R., Sarker, S., Borg, C. K. H., Saal, J., Ward, L., Mehta, A., Snyder, G.
  2022

- **Towards Automated Design of Corrosion Resistant Alloy Coatings with an Autonomous Scanning Droplet Cell** *JOM*
  DeCost, B., Joress, H., Sarker, S., Mehta, A., Hattrick-Simpers, J.
  2022; 74 (8): 2941-2950

- **Ultrathin ferroic HfO2-ZrO2 superlattice gate stack for advanced transistors.** *Nature*
  Cheema, S. S., Shanker, N., Wang, L., Hsu, C., Hsu, S., Liao, Y., San Jose, M., Gomez, J., Chakraborty, W., Li, W., Bae, J., Volkman, S. K., Kwon, et al
  2022; 604 (7904): 65-71

- **CeO2 Doping of Hf0.5Zr0.5O2 Thin Films for High Endurance Ferroelectric Memories** *ADVANCED ELECTRONIC MATERIALS*
  Yu, Z., Saini, B., Liao, P., Chang, Y., Hou, D., Nien, C., Shih, Y., Yeong, S., Afanas'ev, V., Huang, F., Baniecki, J. D., Mehta, A., Chang, et al
  2022

- **Discovering exceptionally hard and wear-resistant metallic glasses by combining machine-learning with high throughput experimentation** *APPLIED PHYSICS REVIEWS*
  Sarker, S., Tang-Kong, R., Schoeppner, R., Ward, L., Hasan, N., Van Campen, D. G., Takeuchi, I., Hattrick-Simpers, J., Zakutayev, A., Packard, C. E., Mehta, A.
  2022; 9 (1)

- **Physics in the Machine: Integrating Physical Knowledge in Autonomous Phase-Mapping** *FRONTIERS IN PHYSICS*
  Kusne, A., McDannald, A., DeCost, B., Oses, C., Toher, C., Curtarolo, S., Mehta, A., Takeuchi, I.
  2022; 10

- **Autonomous experimentation systems for materials development: A community perspective** *MATTER*
  Stach, E., DeCost, B., Kusne, A., Hattrick-Simpers, J., Brown, K. A., Reyes, K. G., Schrier, J., Billinge, S., Buonassisi, T., Foster, I., Gomes, C. P., Gregoire, J. M., Mehta, et al
  2021; 4 (9): 2702-2726

- **Dynamics and Hysteresis of Hydrogen Intercalation and Deintercalation in Palladium Electrodes: A Multimodal In Situ X-ray Diffraction, Coulometry, and Computational Study** *CHEMISTRY OF MATERIALS*
  Landers, A. T., Peng, H., Koshy, D. M., Lee, S., Feaster, J. T., Lin, J. C., Beeman, J. W., Higgins, D., Yano, J., Drisdell, W. S., Davis, R. C., Bajdich, M., Abild-Pedersen, et al
  2021; 33 (15): 5872-5884

- **Highly Efficient Uniaxial In-Plane Stretching of a 2D Material via Ion Insertion.** *Advanced materials (Deerfield Beach, Fla.)*
  Muscher, P. K., Rehn, D. A., Sood, A., Lim, K., Luo, D., Shen, X., Zajac, M., Lu, F., Mehta, A., Li, Y., Wang, X., Reed, E. J., Chueh, et al
  2021: e2101875

- **Cation and anion topotactic transformations in cobaltite thin films leading to Ruddlesden-Popper phases** *PHYSICAL REVIEW MATERIALS*
  Chiu, I., Lee, M., Cheng, S., Zhang, S., Heki, L., Zhang, Z., Mohtashami, Y., Lapa, P. N., Feng, M., Shafer, P., N'Diaye, A. T., Mehta, A., Schuller, et al
  2021; 5 (6)

- **Emergent long-range magnetic order in ultrathin (111)-oriented LaNiO3 films** *NPJ QUANTUM MATERIALS*
  Kane, M. M., Vailionis, A., Riddiford, L. J., Mehta, A., N'Diaye, A. T., Klewe, C., Shafer, P., Arenholz, E., Suzuki, Y.
  2021; 6 (1)

- **A refraction correction for buried interfaces applied to in situ grazing-incidence X-ray diffraction studies on Pd electrodes.** *Journal of synchrotron radiation*
  Landers, A. T., Koshy, D. M., Lee, S. H., Drisdell, W. S., Davis, R. C., Hahn, C., Mehta, A., Jaramillo, T. F.
  2021; 28 (Pt 3): 919–23

- **Phase stabilization and oxidation of a continuous composition spread multi-principal element (AlFeNiTiVZr)(1-x)Cr-x alloy** *JOURNAL OF ALLOYS AND COMPOUNDS*
  Ruiz-Yi, B., Williams, T., Bunn, J., Ren, F., Al Hasan, N., Takeuchi, I., Hattrick-Simpers, J., Mehta, A.
  2021; 861

- **In Situ Characterization of Ferroelectric HfO₂ During Rapid Thermal Annealing** *PHYSICA STATUS SOLIDI-RAPID RESEARCH LETTERS*
  Narasimhan, V., McBriarty, M. E., Passarello, D., Adinolfi, V., Toney, M. F., Mehta, A., Littau, K. A.
  2021; 15 (5)

- **Characterization data of an (AlFeNiTiVZr)1-xCrx multi-principal element alloy continuous composition spread library.** *Data in brief*
  Ruiz-Yi, B., Williams, T., Bunn, J. K., Ren, F., Hasan, N. A., Takeuchi, I., Hattrick-Simpers, J., Mehta, A.
  2021; 34: 106758

- **Identifying and Tuning the In Situ Oxygen-Rich Surface of Molybdenum Nitride Electrocatalysts for Oxygen Reduction** *ACS APPLIED ENERGY MATERIALS*
  Stevens, M., Kreider, M. E., Patel, A. M., Wang, Z., Liu, Y., Gibbons, B. M., Statt, M. J., Ievlev, A., Sinclair, R., Mehta, A., Davis, R. C., Norskov, J. K., Gallo, et al
  2020; 3 (12): 12433–46

- **On-the-fly closed-loop materials discovery via Bayesian active learning.** *Nature communications*
  Kusne, A. G., Yu, H., Wu, C., Zhang, H., Hattrick-Simpers, J., DeCost, B., Sarker, S., Oses, C., Toher, C., Curtarolo, S., Davydov, A. V., Agarwal, R., Bendersky, et al
  2020; 11 (1): 5966

- **High-Throughput Characterization of (FexCo1-x)3O4 Thin-Film Composition Spreads.** *ACS combinatorial science*
  Piotrowiak, T. H., Wang, X., Banko, L., Kumari, S., Sarker, S., Mehta, A., Ludwig, A.
  2020

- **Exploring the First High-Entropy Thin Film Libraries: Composition Spread-Controlled Crystalline Structure.** *ACS combinatorial science*
  Nguyen, T. X., Su, Y., Hattrick-Simpers, J., Joress, H., Nagata, T., Chang, K., Sarker, S., Mehta, A., Ting, J.
  2020

- **Controlling Magnetization Vector Depth Profiles of La_{0.7}Sr_{0.3}CoO₃/La_{0.7}Sr_{0.3}MnO₃ Exchange Spring Bilayers via Interface Reconstruction** *ACS APPLIED MATERIALS & INTERFACES*
  Kane, A. M., Chiu, I., Ahlm, N. J., Chopdekar, R., N'Diaye, A. T., Arenholz, E., Mehta, A., Lauter, V., Takamura, Y.
  2020; 12 (40): 45437-45443

- **Combinatorial Exploration and Mapping of Phase Transformation in a Ni-Ti-Co Thin Film Library.** *ACS combinatorial science*
  Al Hasan, N. M., Hou, H., Gao, T., Counsell, J., Sarker, S., Thienhaus, S., Walton, E., Decker, P., Mehta, A., Ludwig, A., Takeuchi, I.
  2020

- **A High-Throughput Structural and Electrochemical Study of Metallic Glass Formation in Ni-Ti-Al** *ACS COMBINATORIAL SCIENCE*
  Joress, H., DeCost, B. L., Sarker, S., Braun, T. M., Jilani, S., Smith, R., Ward, L., Laws, K. J., Mehta, A., Hattrick-Simpers, J. R.
  2020; 22 (7): 330–38

- **Structural and photoelectrochemical properties in the thin film system Cu-Fe-V-O and its ternary subsystems Fe-V-O and Cu-V-O.** *The Journal of chemical physics*
  Kumari, S., Junqueira, J. R., Sarker, S., Mehta, A., Schuhmann, W., Ludwig, A.
  2020; 153 (1): 014707

- **Visualizing Energy Transfer at Buried Interfaces in Layered Materials Using Picosecond X-Rays** *ADVANCED FUNCTIONAL MATERIALS*
  Nyby, C., Sood, A., Zalden, P., Gabourie, A. J., Muscher, P., Rhodes, D., Mannebach, E., Corbett, J., Mehta, A., Pop, E., Heinz, T. F., Lindenberg, A. M.
  2020

- **Combinatorial Synthesis and High-Throughput Characterization of Microstructure and Phase Transformation in Ni-Ti-Cu-V Quaternary Thin-Film Library** *ENGINEERING*
  Al Hasan, N. M., Hou, H., Sarkar, S., Thienhaus, S., Mehta, A., Ludwig, A., Takeuchi, I.
  2020; 6 (6): 637-643

- **Enhanced ferroelectricity in ultrathin films grown directly on silicon (vol 580, pg 478, 2020)** *NATURE*
  Cheema, S. S., Kwon, D., Shanker, N., dos Reis, R., Hsu, S., Xiao, J., Zhang, H., Wagner, R., Datar, A., McCarter, M. R., Serrao, C. R., Yadav, A. K., Karbasian, et al
  2020: E5

- **High-throughput characterization of Ag-V-O nanostructured thin-film materials libraries for photoelectrochemical solar water splitting** *INTERNATIONAL JOURNAL OF HYDROGEN ENERGY*
  Kumari, S., Helt, L., Junqueira, J. R. C., Kostka, A., Zhang, S., Sarker, S., Mehta, A., Scheu, C., Schuhmann, W., Ludwig, A.
  2020; 45 (21): 12037–47

- **Nitride or Oxynitride? Elucidating the Composition-Activity Relationships in Molybdenum Nitride Electrocatalysts for the Oxygen Reduction Reaction** *CHEMISTRY OF MATERIALS*
  Kreider, M. E., Stevens, M., Liu, Y., Patel, A. M., Statt, M. J., Gibbons, B. M., Gallo, A., Ben-Naim, M., Mehta, A., Davis, R. C., Ievlev, A., Norskov, J. K., Sinclair, et al
  2020; 32 (7): 2946–60

- **Enhanced ferroelectricity in ultrathin films grown directly on silicon.** *Nature*
  Cheema, S. S., Kwon, D., Shanker, N., Dos Reis, R., Hsu, S., Xiao, J., Zhang, H., Wagner, R., Datar, A., McCarter, M. R., Serrao, C. R., Yadav, A. K., Karbasian, et al
  2020; 580 (7804): 478–82

- **High-Throughput Exploration of Lithium-Alloy Protection Layers for High-Performance Lithium-Metal Batteries** *ACS APPLIED ENERGY MATERIALS*
  Manandhar, K., Ren, Y., Stasak, D., Hou, H., Kirsch, D., Sarker, S., Mehta, A., Sardar, S., Xiao, M., Weaver, J. L., Leon, C., Hart, G., Sunaoshi, et al
  2020; 3 (3): 2547-2555

- **Phase transitions and magnetic domain coexistence in Nd_{0.5}Sr_{0.5}MnO₃ thin films** *JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS*
  Chiu, I., Kane, A. M., Chopdekar, R. V., Lyu, P., Mehta, A., Rouleau, C. M., N'Diaye, A. T., Arenholz, E., Takamura, Y.
  2020; 498

- **In Situ X-Ray Absorption Spectroscopy Disentangles the Roles of Copper and Silver in a Bimetallic Catalyst for the Oxygen Reduction Reaction** *CHEMISTRY OF MATERIALS*

Gibbons, B. M., Wette, M., Stevens, M., Davis, R. C., Siahrostami, S., Kreider, M., Mehta, A., Higgins, D. C., Clemens, B. M., Jaramillo, T. F.
2020; 32 (5): 1819–27

- **Metal-promoted Mo6S8 clusters: a platform for probing ensemble effects on the electrochemical conversion of CO2 and CO to methanol** *MATERIALS HORIZONS*
  Perryman, J. T., Ortiz-Rodriguez, J. C., Jude, J. W., Hyler, F. P., Davis, R. C., Mehta, A., Kulkarni, A. R., Patridge, C. J., Velazquez, J. M.
  2020; 7 (1): 193–202

- **Development of new Mg-Zn-Sr alloys for medical purpose**
  Sulikova, M., Molcanova, Z., Ballokova, B., Durisin, J., Martinkova, S., Varcholova, D., Michalik, S., Tang-Kong, R., Ward, L., Mehta, A., Sulova, K., Fejercak, M., Lachova, et al
  INDERSCIENCE ENTERPRISES LTD.2020: 573–82

- **Oxidation State and Surface Reconstruction of Cu under CO2 Reduction Conditions from In Situ X-ray Characterization.** *Journal of the American Chemical Society*
  Lee, S. H., Lin, J. C., Farmand, M. n., Landers, A. T., Feaster, J. T., Avilés Acosta, J. E., Beeman, J. W., Ye, Y. n., Yano, J. n., Mehta, A. n., Davis, R. C., Jaramillo, T. F., Hahn, et al
  2020

- **Combinatorial Tuning of Structural and Optoelectronic Properties in CuXZn1-XS** *MATTER*
  Woods-Robinson, R., Han, Y., Mangum, J. S., Melamed, C. L., Gorman, B. P., Mehta, A., Persson, K. A., Zakutayev, A.
  2019; 1 (4): 862-880

- **Crystal Phase Distribution and Ferroelectricity in Ultrathin HfO2-ZrO2 Bilayers** *PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS*
  McBriarty, M. E., Narasimhan, V. K., Weeks, S. L., Pal, A., Fang, H., Petach, T. A., Mehta, A., Davis, R. C., Barabash, S., Littau, K. A.
  2019

- **Materials science in the artificial intelligence age: high-throughput library generation, machine learning, and a pathway from correlations to the underpinning physics** *MRS COMMUNICATIONS*
  Vasudevan, R. K., Choudhary, K., Mehta, A., Smith, R., Kusne, G., Tavazza, F., Vlcek, L., Ziatdinov, M., Kalinin, S. V., Hattrick-Simpers, J.
  2019; 9 (3): 821–38

- **Controlling shape memory effects in NiTi thin films grown on Ru seed layer** *SENSORS AND ACTUATORS A-PHYSICAL*
  Ainslie, K., Knick, C., Smith, G., Li, J., Troxel, C., Mehta, A., Kukreja, R.
  2019; 294: 133–39

- **An Inter-Laboratory Study of Zn-Sn-Ti-O Thin Films using High-Throughput Experimental Methods** *ACS COMBINATORIAL SCIENCE*
  Hattrick-Simpers, J. R., Zakutayev, A., Barron, S. C., Trautt, Z. T., Nam Nguyen, Choudhary, K., DeCost, B., Phillips, C., Kusne, A., Yi, F., Mehta, A., Takeuchi, I., Perkins, J. D., et al
  2019; 21 (5): 350-361

- **X-ray absorption spectroscopy study of the electronic structure and local coordination of 1st row transition metal-promoted Chevrel-phase sulfides** *JOURNAL OF COORDINATION CHEMISTRY*
  Perryman, J. T., Hyler, F. P., Ortiz-Rodriguez, J. C., Mehta, A., Kulkarni, A. R., Velazquez, J. M.
  2019; 72 (8): 1322–35

- **Observing hydrogen intercalation into palladium thin films using in situ grazing incidence x-ray diffraction and x-ray reflectivity**
  Landers, A., Feaster, J., Brown, K., Lin, J., Farmand, M., Fackler, S., Nishimura, Y., Beeman, J., Bajdich, M., Higgins, D., Yano, J., Drisdell, W., Davis, et al
  AMER CHEMICAL SOC.2019

- **Absence of Oxidized Phases in Cu under CO Reduction Conditions** *ACS ENERGY LETTERS*
  Scott, S. B., Hogg, T. V., Landers, A. T., Maagaard, T., Bertheussen, E., Lin, J. C., Davis, R. C., Beeman, J. W., Higgins, D., Drisdell, W. S., Hahn, C., Mehta, A., Seger, et al
  2019; 4 (3): 803–4

- **Phase selection motifs in High Entropy Alloys revealed through combinatorial methods: Large atomic size difference favors BCC over FCC** *ACTA MATERIALIA*
  Kube, S., Sohn, S., Uhl, D., Datye, A., Mehta, A., Schroers, J.
  2019; 166: 677-686

- **Electrochemical flow cell enabling operando probing of electrocatalyst surfaces by X-ray spectroscopy and diffraction.** *Physical chemistry chemical physics : PCCP*
  Farmand, M., Landers, A. T., Lin, J. C., Feaster, J. T., Beeman, J. W., Ye, Y., Clark, E. L., Higgins, D., Yano, J., Davis, R. C., Mehta, A., Jaramillo, T. F., Hahn, et al
  2019
- **Decoupling exchange bias and coercivity enhancement in a perovskite oxide exchange spring bilayer** *PHYSICAL REVIEW MATERIALS*
  Kane, A. M., Chopdekar, R. V., N'Diaye, A. T., Scholl, A., Arenholz, E., Mehta, A., Takamura, Y.
  2019; 3 (1)
- **Garnet Electrolyte Surface Degradation and Recovery** *ACS APPLIED ENERGY MATERIALS*
  Cheng, L., Liu, M., Mehta, A., Xin, H., Lin, F., Persson, K., Chen, G., Crumlin, E. J., Doeff, M.
  2018; 1 (12): 7244-+
- **Ionic tuning of cobaltites at the nanoscale** *PHYSICAL REVIEW MATERIALS*
  Gilbert, D. A., Grutter, A. J., Murray, P. D., Chopdekar, R. V., Kane, A. M., Ionin, A. L., Lee, M. S., Spurgeon, S. R., Kirby, B. J., Maranville, B. B., N'Diaye, A. T., Mehta, A., Arenholz, et al
  2018; 2 (10)
- **Can machine learning identify the next high-temperature superconductor? Examining extrapolation performance for materials discovery** *MOLECULAR SYSTEMS DESIGN & ENGINEERING*
  Meredig, B., Antono, E., Church, C., Hutchinson, M., Ling, J., Paradiso, S., Blaiszik, B., Foster, I., Gibbons, B., Hattrick-Simpers, J., Mehta, A., Ward, L.
  2018; 3 (5): 819–25
- **Surface Orientation Dependent Water Dissociation on Rutile Ruthenium Dioxide** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Rao, R. R., Kolb, M. J., Hwang, J., Pedersen, A., Mehta, A., You, H., Stoerzinger, K. A., Feng, Z., Zhou, H., Bluhm, H., Giordano, L., Stephens, I. E. L., Shao-Horn, et al
  2018; 122 (31): 17802–11
- **Xi-cam: a versatile interface for data visualization and analysis.** *Journal of synchrotron radiation*
  Pandolfi, R. J., Allan, D. B., Arenholz, E., Barroso-Luque, L., Campbell, S. I., Caswell, T. A., Blair, A., De Carlo, F., Fackler, S., Fournier, A. P., Freychet, G., Fukuto, M., Gursoy, et al
  2018; 25 (Pt 4): 1261–70
- **Copper Silver Thin Films with Metastable Miscibility for Oxygen Reduction Electrocatalysis in Alkaline Electrolytes** *ACS APPLIED ENERGY MATERIALS*
  Higgins, D., Wette, M., Gibbons, B. M., Siahrostami, S., Hahn, C., Escudero-Escribano, M., Garcia-Melchor, M., Ulissi, Z., Davis, R. C., Mehta, A., Clemens, B. M., Norskov, J. K., Jaramillo, et al
  2018; 1 (5): 1990–99
- **Accelerated discovery of metallic glasses through iteration of machine learning and high-throughput experiments** *SCIENCE ADVANCES*
  Ren, F., Ward, L., Williams, T., Laws, K. J., Wolverton, C., Hattrick-Simpers, J., Mehta, A.
  2018; 4 (4): eaaq1566
- **Nanoparticles via vapor phase condensation for energy applications**
  Clemens, B., Gibbons, B., Wetter, M., Higgins, D., Jaramillo, T., Baker, J., Bent, S., Mehta, A., Davis, R.
  AMER CHEMICAL SOC.2018
- **Evidence that abnormal grain growth precedes fatigue crack initiation in nanocrystalline Ni-Fe** *SCRIPTA MATERIALIA*
  Furnish, T. A., Bufford, D. C., Ren, F., Mehta, A., Hattar, K., Boyce, B. L.
  2018; 143: 15–19
- **Engineered superlattices with crossover from decoupled to synthetic ferromagnetic behavior** *JOURNAL OF PHYSICS-CONDENSED MATTER*
  Chopdekar, R. V., Malik, V. K., Kane, A. M., Mehta, A., Arenholz, E., Takamura, Y.
  2018; 30 (1): 015805
- **The Complexity of the CaF₂:Yb System: A Huge, Reversible, X-ray-Induced Valence Reduction** *JOURNAL OF PHYSICAL CHEMISTRY C*
  MacKeen, C., Bridges, F., Seijo, L., Barandiaran, Z., Kozina, M., Mehta, A., Reid, M. F., Wells, J. R.

2017; 121 (51): 28435-28442

- **Coupling between oxygen redox and cation migration explains unusual electrochemistry in lithium-rich layered oxides.** *Nature communications*
  Gent, W. E., Lim, K., Liang, Y., Li, Q., Barnes, T., Ahn, S. J., Stone, K. H., McIntire, M., Hong, J., Song, J. H., Li, Y., Mehta, A., Ermon, et al
  2017; 8 (1): 2091
- **Coupling between oxygen redox and cation migration explains unusual electrochemistry in lithium-rich layered oxides** *NATURE COMMUNICATIONS*
  Gent, W. E., Lim, K., Liang, Y., Li, Q., Barnes, T., Ahn, S., Stone, K. H., McIntire, M., Hong, J., Song, J., Li, Y., Mehta, A., Ermon, et al
  2017; 8
- **Towards identifying the active sites on RuO2(110) in catalyzing oxygen evolution** *ENERGY & ENVIRONMENTAL SCIENCE*
  Rao, R. R., Kolb, M. J., Halck, N., Pedersen, A., Mehta, A., You, H., Stoerzinger, K. A., Feng, Z., Hansen, H. A., Zhou, H., Giordano, L., Rossmeisl, J., Vegge, et al
  2017; 10 (12): 2626–37
- **Finding a Needle in the Haystack: Identification of Functionally Important Minority Phases in an Operating Battery** *NANO LETTERS*
  Zhang, K., Ren, F., Wang, X., Hu, E., Xu, Y., Yang, X., Li, H., Chen, L., Pianetta, P., Mehta, A., Yu, X., Liu, Y.
  2017; 17 (12): 7782–88
- **Dynamic Optical Tuning of Interlayer Interactions in the Transition Metal Dichalcogenides** *NANO LETTERS*
  Mannebach, E. M., Nyby, C., Ernst, F., Zhou, Y., Tolsma, J., Li, Y., Sher, M., Tung, I., Zhou, H., Zhang, Q., Seyler, K. L., Clark, G., Lin, et al
  2017; 17 (12): 7761-7766
- **On-the-fly segmentation approaches for x-ray diffraction datasets for metallic glasses** *MRS COMMUNICATIONS*
  Ren, F., Williams, T., Hattrick-Simpers, J., Mehta, A.
  2017; 7 (3): 613-620
- **Multimodal x-ray characterization of solar fuels catalysts under operation**
  Farmand, M., Feaster, J., Davis, R., Fackler, S., Landers, A., Lin, J., Hahn, C., Jaramillo, T., Yano, J., Mehta, A., Drisdell, W.
  AMER CHEMICAL SOC.2017
- **Monitoring Deformation in Graphene Through Hyperspectral Synchrotron Spectroscopy to Inform Fabrication** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Winter, A., Rojas, W. Y., Williams, A. D., Kim, S. S., Ouchen, F., Fischer, D. A., Weiland, C., Principe, E., Banerjee, S., Huynh, C., Naik, R. R., Liu, Y., Mehta, et al
  2017; 121 (29): 15653–64
- **Evidence That the Anomalous Emission from CaF₂:Yb²⁺ Is Not Described by the Impurity Trapped Exciton Model** *JOURNAL OF PHYSICAL CHEMISTRY LETTERS*
  MacKeen, C., Bridges, F., Kozina, M., Mehta, A., Reid, M. F., Wells, J. R., Barandiaran, Z.
  2017; 8 (14): 3313-3316
- **Enhanced lithium ion transport in garnet-type solid state electrolytes** *JOURNAL OF ELECTROCERAMICS*
  Cheng, L., Hou, H., Lux, S., Kostecki, R., Davis, R., Zorba, V., Mehta, A., Doeff, M.
  2017; 38 (2-4): 168–75
- **On-the-Fly Data Assessment for High-Throughput X-ray Diffraction Measurements.** *ACS combinatorial science*
  Ren, F., Pandolfi, R., van Campen, D., Hexemer, A., Mehta, A.
  2017
- **Crystal truncation rods from miscut surfaces** *PHYSICAL REVIEW B*
  Petach, T. A., Mehta, A., Toney, M. F., Goldhaber-Gordon, D.
  2017; 95 (18)
- **Operando electrochemical grazing incidence x-ray absorption and diffraction for the CO2 reduction reaction**
  Feaster, J., Farmand, M., Lin, J., Landers, A., Fackler, S., Davis, R., Mehta, A., Yano, J., Jaramillo, T., Drisdell, W.
  AMER CHEMICAL SOC.2017
- **Combinatorial study of Fe-Co-V hard magnetic thin films** *SCIENCE AND TECHNOLOGY OF ADVANCED MATERIALS*

Fackler, S. W., Alexandrakis, V., Koenig, D., Kusne, A., Gao, T., Kramer, M. J., Stasak, D., Lopez, K., Zayac, B., Mehta, A., Ludwig, A., Takeuchi, I.
2017; 18 (1): 231–38

- **Dynamic Optical Tuning of Interlayer Interactions in the Transition Metal Dichalcogenides.** *Nano letters*
  Mannebach, E. M., Nyby, C. n., Ernst, F. n., Zhou, Y. n., Tolsma, J. n., Li, Y. n., Sher, M. J., Tung, I. C., Zhou, H. n., Zhang, Q. n., Seyler, K. L., Clark, G. n., Lin, et al
  2017; 17 (12): 7761–66

- **Understanding the Degradation Mechanism of Lithium Nickel Oxide Cathodes for Li-Ion Batteries** *ACS APPLIED MATERIALS & INTERFACES*
  Xu, J., Hu, E., Nordlund, D., Mehta, A., Ehrlich, S. N., Yang, X., Tong, W.
  2016; 8 (46): 31677–83

- **High Throughput Light Absorber Discovery, Part 2: Establishing Structure-Band Gap Energy Relationships** *ACS COMBINATORIAL SCIENCE*
  Suram, S. K., Newhouse, P. F., Zhou, L., Van Campen, D. G., Mehta, A., Gregoire, J. M.
  2016; 18 (11): 682-688

- **Tuning interfacial exchange interactions via electronic reconstruction in transition-metal oxide heterostructures** *APPLIED PHYSICS LETTERS*
  Li, B., Chopdekar, R. V., N'Diaye, A. T., Mehta, A., Byers, J., Browning, N. D., Arenholz, E., Takamura, Y.
  2016; 109 (15)

- **PtxGd alloy formation on Pt(111): Preparation and structural characterization** *SURFACE SCIENCE*
  Ulrikkeholm, E. T., Pedersen, A. F., Vej-Hansen, U. G., Escudero-Escribano, M., Stephens, I. E., Friebel, D., Mehta, A., Schiotz, J., Feidenhansl, R. K., Nilsson, A., Chorkendorff, I.
  2016; 652: 114-122

- **Unsupervised Data Mining in nanoscale X-ray Spectro-Microscopic Study of NdFeB Magnet** *SCIENTIFIC REPORTS*
  Duan, X., Yang, F., Antono, E., Yang, W., Pianetta, P., Ermon, S., Mehta, A., Liu, Y.
  2016; 6

- **The Different Roles of Entropy and Solubility in High Entropy Alloy Stability** *ACS COMBINATORIAL SCIENCE*
  Ruiz-Yi, B., Bunn, J., Stasak, D., Mehta, A., Besser, M., Kramer, M. J., Takeuchi, I., Hattrick-Simpers, J.
  2016; 18 (9): 596-603

- **Measurement and Modeling of Short and Medium Range Order in Amorphous Ta2O5 Thin Films** *SCIENTIFIC REPORTS*
  Shyam, B., Stone, K. H., Bassiri, R., Fejer, M. M., Toney, M. F., Mehta, A.
  2016; 6

- **Influence of amorphous structure on polymorphism in vanadia** *APL MATERIALS*
  Stone, K. H., Schelhas, L. T., Garten, L. M., Shyam, B., Mehta, A., Ndione, P. F., Ginley, D. S., Toney, M. F.
  2016; 4 (7)

- **Reverse Engineering Ancient Greek Ceramics: Morphological and Spectral Characterization of Replicates** *JOURNAL OF THE AMERICAN CERAMIC SOCIETY*
  Cianchetta, I., Trentelman, K., Walton, M. S., Maish, J., Mehta, A., Foran, B.
  2016; 99 (5): 1792-1801

- **Analytical imaging studies of the migration of degraded orpiment, realgar, and emerald green pigments in historic paintings and related conservation issues** *HERITAGE SCIENCE*
  Keune, K., Mass, J., Mehta, A., Church, J., Meirer, F.
  2016; 4

- **Order, disorder and mixing: The atomic structure of amorphous mixtures of titania and tantala** *JOURNAL OF NON-CRYSTALLINE SOLIDS*
  Bassiri, R., Abernathy, M. R., Liou, F., Mehta, A., Gustafson, E. K., Hart, M. J., Isa, H. N., Kim, N., Lin, A. C., MacLaren, I., Martin, I. W., Route, R. K., Rowan, et al
  2016; 438: 59-66

- **Voltage-Controlled Interfacial Layering in an Ionic Liquid on SrTiO3** *ACS NANO*
  Petach, T. A., Mehta, A., Marks, R., Johnson, B., Toney, M. F., Goldhaber-Gordon, D.

2016; 10 (4): 4565-4569

- **Reverse engineering ancient Athenian pottery: A collaboration between cultural heritage, industry, and academia**
  Trentelman, K., Cianchetta, I., Walton, M., Mehta, A., Pianetta, P., Foran, B., Saunders, D., Maish, J.
  AMER CHEMICAL SOC.2016
- **Thickness dependence of exchange coupling in (111)-oriented perovskite oxide superlattices** *PHYSICAL REVIEW B*
  Jia, Y., Chopdekar, R. V., Arenholz, E., Liu, Z., Biegalski, M. D., Porter, Z. D., Mehta, A., Takamura, Y.
  2016; 93 (10)
- **Strontium carbonate nanoparticles for the surface treatment of problematic sulfur and iron in waterlogged archaeological wood** *JOURNAL OF CULTURAL HERITAGE*
  Schofield, E. J., Sarangi, R., Mehta, A., Jones, A. M., Smith, A., Mosselmans, J. F., Chadwick, A. V.
  2016; 18: 306-312
- **Investigating the firing protocol of Athenian pottery production: A Raman study of replicate and ancient sherds** *JOURNAL OF RAMAN SPECTROSCOPY*
  Cianchetta, I., Maish, J., Saunders, D., Walton, M., Mehta, A., Foran, B., Trentelman, K.
  2015; 46 (10): 996-1002
- **Exchange coupling in (111)-oriented La0.7Sr0.3MnO3/La0.7Sr0.3FeO3 superlattices** *PHYSICAL REVIEW B*
  Jia, Y., Chopdekar, R. V., Arenholz, E., Young, A. T., Marcus, M. A., Mehta, A., Takamura, Y.
  2015; 92 (9)
- **A high-throughput investigation of Fe-Cr-Al as a novel high-temperature coating for nuclear cladding materials** *NANOTECHNOLOGY*
  Bunn, J., Fang, R. L., Albing, M. R., Mehta, A., Kramer, M. J., Besser, M. F., Hattrick-Simpers, J. R.
  2015; 26 (27): 274003
- **Dimensionality Controlled Octahedral Symmetry-Mismatch and Functionalities in Epitaxial LaCoO3/SrTiO3 Heterostructures.** *Nano letters*
  Qiao, L., Jang, J. H., Singh, D. J., Gai, Z., Xiao, H., Mehta, A., Vasudevan, R. K., Tselev, A., Feng, Z., Zhou, H., Li, S., Prellier, W., Zu, et al
  2015; 15 (7): 4677-4684
- **Impact of symmetry on the ferroelectric properties of CaTiO₃ thin films (vol 106, 162904, 2015)** *APPLIED PHYSICS LETTERS*
  Biegalski, M. D., Qiao, L., Gu, Y., Mehta, A., He, Q., Takamura, Y., Borisevich, A., Chen, L.
  2015; 106 (21)
- **Impact of symmetry on the ferroelectric properties of CaTiO₃ thin films** *APPLIED PHYSICS LETTERS*
  Biegalski, M. D., Qiao, L., Gu, Y., Mehta, A., He, Q., Takamura, Y., Borisevich, A., Chen, L.
  2015; 106 (16)
- **Order within disorder: The atomic structure of ion-beam sputtered amorphous tantala (a-Ta2O5)** *APL MATERIALS*
  Bassiri, R., Liou, F., Abernathy, M. R., Lin, A. C., Kim, N., Mehta, A., Shyam, B., Byer, R. L., Gustafson, E. K., Hart, M., MacLaren, I., Martin, I. W., Route, et al
  2015; 3 (3)
- **Tracking the transformation and transport of arsenic sulfide pigments in paints: synchrotron-based X-ray micro-analyses** *JOURNAL OF ANALYTICAL ATOMIC SPECTROMETRY*
  Keune, K., Mass, J., Meirer, F., Pottasch, C., van Loon, A., Hull, A., Church, J., Pouyet, E., Cotte, M., Mehta, A.
  2015; 30 (3): 813-827
- **Effects of crystallinity and impurities on the electrical conductivity of Li-La-Zr-O thin films** *THIN SOLID FILMS*
  Park, J. S., Cheng, L., Zorba, V., Mehta, A., Cabana, J., Chen, G., Doeff, M. M., Richardson, T. J., Park, J. H., Son, J., Hong, W.
  2015; 576: 55-60
- **Unconventional switching behavior in La_{0.7}Sr_{0.3}MnO₃/La_{0.7}Sr_{0.3}CoO₃ exchange-spring bilayers** *APPLIED PHYSICS LETTERS*
  Li, B., Chopdekar, R. V., Arenholz, E., Mehta, A., Takamura, Y.
  2014; 105 (20)
- **Interrelation between Structure - Magnetic Properties in La_{0.5}Sr_{0.5}CoO₃** *ADVANCED MATERIALS INTERFACES*

Biegalski, M. D., Takamura, Y., Mehta, A., Gai, Z., Kalinin, S. V., Ambaye, H., Lauter, V., Fong, D., Pantelides, S. T., Kim, Y. M., He, J., Borisevich, A., Siemons, et al
2014; 1 (8)

- **On-the-fly machine-learning for high-throughput experiments: search for rare-earth-free permanent magnets** *SCIENTIFIC REPORTS*
  Kusne, A., Gao, T., Mehta, A., Ke, L., Manh Cuong Nguyen, Ho, K., Antropov, V., Wang, C., Kramer, M. J., Long, C., Takeuchi, I.
  2014; 4: 6367
- **Mechanism for the large conductance modulation in electrolyte-gated thin gold films** *PHYSICAL REVIEW B*
  Petach, T. A., Lee, M., Davis, R. C., Mehta, A., Goldhaber-Gordon, D.
  2014; 90 (8)
- **On the mechanism that leads to vanishing thermal hysteresis of the B2-R phase transformation in multilayered (TiNi)/(W) shape memory alloy thin films** *THIN SOLID FILMS*
  Buenconsejo, P. S., Zarnetta, R., Young, M., Brunken, H., Mehta, A., Ludwig, A.
  2014; 564: 79-85
- **Sol-flame synthesis of cobalt-doped TiO2 nanowires with enhanced electrocatalytic activity for oxygen evolution reaction.** *Physical chemistry chemical physics*
  Cai, L., Cho, I. S., Logar, M., Mehta, A., He, J., Lee, C. H., Rao, P. M., Feng, Y., Wilcox, J., Prinz, F. B., Zheng, X.
  2014; 16 (24): 12299-12306
- **Learning from the past: Rare epsilon-Fe2O3 in the ancient black-glazed Jian (Tenmoku) wares** *SCIENTIFIC REPORTS*
  Dejoie, C., Sciau, P., Li, W., Noe, L., Mehta, A., Chen, K., Luo, H., Kunz, M., Tamura, N., Liu, Z.
  2014; 4
- **Magnetic ordering of implanted Mn in HOPG substrates** *PHYSICAL REVIEW B*
  Guchhait, S., Ohldag, H., Arenholz, E., Ferrer, D. A., Mehta, A., Banerjee, S. K.
  2013; 88 (17)
- **Characterization of Electrode Materials for Lithium Ion and Sodium Ion Batteries Using Synchrotron Radiation Techniques** *JOVE-JOURNAL OF VISUALIZED EXPERIMENTS*
  Doeff, M. M., Chen, G., Cabana, J., Richardson, T. J., Mehta, A., Shirpour, M., Duncan, H., Kim, C., Kam, K. C., Conry, T.
  2013: e50594
- **Material Evidence for Multiple Firings of Ancient Athenian Red-Figure Pottery** *JOURNAL OF THE AMERICAN CERAMIC SOCIETY*
  Walton, M., Trentelman, K., Cummings, M., Poretti, G., Maish, J., Saunders, D., Foran, B., Brodie, M., Mehta, A.
  2013; 96 (7): 2031-2035
- **Formation of arsenolite crystals at room temperature after very high dose arsenic implantation in silicon** *APPLIED PHYSICS LETTERS*
  Meirer, F., Giubertoni, D., Demenev, E., Vanzetti, L., Gennaro, S., Fedrizzi, M., Pepponi, G., Mehta, A., Pianetta, P., Steinhauser, G., Vishwanath, V., Foad, M., Bersani, et al
  2012; 101 (23)
- **Structural Underpinnings of the Enhanced Cycling Stability upon Al-Substitution in LiNi0.45Mn0.45Co0.1-yAlyO2 Positive Electrode Materials for Li-ion Batteries** *CHEMISTRY OF MATERIALS*
  Conry, T. E., Mehta, A., Cabana, J., Doeff, M. M.
  2012; 24 (17): 3307-3317
- **3D elemental sensitive imaging using transmission X-ray microscopy** *ANALYTICAL AND BIOANALYTICAL CHEMISTRY*
  Liu, Y., Meirer, F., Wang, J., Requena, G., Williams, P., Nelson, J., Mehta, A., Andrews, J. C., Pianetta, P.
  2012; 404 (5): 1297-1301
- **Oxidative Dissolution of Biogenic Uraninite in Groundwater at Old Rifle, CO (vol 45, pg 8748, 2011)** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  Campbell, K. M., Veeramani, H., Ulrich, K., Blue, L. Y., Giammar, D. E., Bernier-Latmani, R., Stubbs, J. E., Suvorova, E., Yabusaki, S., Lezama-Pacheco, J. S., Mehta, A., Long, P. E., Bargar, et al
  2012; 46 (16): 9199
- **XAFS Investigations of LiNi0.45Mn0.45Co0.1-yAlyO2 Positive Electrode Materials** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Conry, T. E., Mehta, A., Cabana, J., Doeff, M. M.

2012; 159 (9): A1562-A1571

- **Electrochemical and Physical Properties of Ti-Substituted Layered Nickel Manganese Cobalt Oxide (NMC) Cathode Materials** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Kam, K. C., Mehta, A., Heron, J. T., Doeff, M. M.
  2012; 159 (8): A1383-A1392

- **Electron bombardment of films used for reducing spurious charge in electrostatic electron optics** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B*
  Maldonado, J. R., Pease, F., Hitzman, C. J., Brodie, A. D., Petric, P., Bevis, C., McCord, M., Tong, W. M., Kidwingira, F., Pianetta, P., Bibee, M., Mehta, A., Bhatia, et al
  2011; 29 (6)

- **Giant magnetostriction in annealed Co1-xFex thin-films** *NATURE COMMUNICATIONS*
  Hunter, D., Osborn, W., Wang, K., Kazantseva, N., Hattrick-Simpers, J., Suchoski, R., Takahashi, R., Young, M. L., Mehta, A., Bendersky, L. A., Lofland, S. E., Wuttig, M., Takeuchi, et al
  2011; 2

- **Oxidative Dissolution of Biogenic Uraninite in Groundwater at Old Rifle, CO** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  Campbell, K. M., Veeramani, H., Urich, K., Blue, L. Y., Giammar, D. E., Bernier-Latmani, R., Stubbs, J. E., Suvorova, E., Yabusaki, S., Lezama-Pacheco, J. S., Mehta, A., Long, P. E., Bargar, et al
  2011; 45 (20): 8748-8754

- **Three-dimensional imaging of chemical phase transformations at the nanoscale with full-field transmission X-ray microscopy** *JOURNAL OF SYNCHROTRON RADIATION*
  Meirer, F., Cabana, J., Liu, Y., Mehta, A., Andrews, J. C., Pianetta, P.
  2011; 18: 773-781

- **Nanoparticle de-acidification of the Mary Rose** *MATERIALS TODAY*
  Schofield, E. J., Sarangi, R., Mehta, A., Jones, A. M., Mosselmans, F. J., Chadwick, A. V.
  2011; 14 (7-8): 354-358

- **Material evidence for the use of Attic white-ground lekythoi ceramics in cremation burials** *JOURNAL OF ARCHAEOLOGICAL SCIENCE*
  Walton, M. S., Svoboda, M., Mehta, A., Webb, S., Trentelman, K.
  2010; 37 (5): 936-940

- **Effect of Mn(II) on the Structure and Reactivity of Biogenic Uraninite** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  Veeramani, H., Schofield, E. J., Sharp, J. O., Suvorova, E. I., Ulrich, K., Mehta, A., Giammar, D. E., Bargar, J. R., Bernier-Latmani, R.
  2009; 43 (17): 6541-6547

- **Manganese incorporation into biogenic uraninite affects its oxidative stability** *19th Annual VM Goldschmidt Conference*
  Veeramani, H., Sharp, J. O., Suvorova, E. I., Schofield, E., Ulrich, K., Mehta, A., Giammar, D. E., Bargar, J. R., Bernier-Latmani, R.
  PERGAMON-ELSEVIER SCIENCE LTD.2009: A1376–A1376

- **Structure, composition, size and reactivity of biogenic nano-uraninite** *19th Annual VM Goldschmidt Conference*
  Bargar, J. R., Bernier-Latmani, R., Giammar, D. E., Mehta, A., Schofield, E., Sharp, J. O., Suvorova, E. I., Ulrich, K., Veeramani, H.
  PERGAMON-ELSEVIER SCIENCE LTD.2009: A87–A87

- **How do biogeochemical conditions affect the products of U(VI) reduction by bacteria?**
  Bernier-Latmani, R., Sharp, J. O., Veeramani, H., Suvorova, E. I., Schofield, E., Bargar, J. R., Mehta, A., Ulrich, K., Giammar, D. E.
  AMER CHEMICAL SOC.2009

- **The Interaction of Bromide Ions with Graphitic Materials** *ADVANCED MATERIALS*
  Mehta, A., Nelson, E. J., Webb, S. M., Holt, J. K.
  2009; 21 (1): 102-106

- **Surface Structure of KIO3 Grown by Heterogeneous Reaction of Ozone with KI (001)** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Brown, M. A., Liu, Z., Ashby, P. D., Mehta, A., Grimm, R. L., Hemminger, J. C.
  2008; 112 (47): 18287-18290

- **Structure of Biogenic Uraninite Produced by Shewanella oneidensis Strain MR-1** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*

Schofield, E. J., Veeramani, H., Sharp, J. O., Suvorova, E., Bernier-Latmani, R., Mehta, A., Stahlman, J., Webb, S. M., Clark, D. L., Conradson, S. D., Ilton, E. S., Bargar, J. R.
2008; 42 (21): 7898-7904

- **GEOC 32-Structural identity and reactivity of biogenic UO2** *236th National Meeting of the American-Chemical-Society*
  Bargar, J. R., Schofield, E., Mehta, A., Veeramani, H., Ulrich, K., Sharp, J., Bernier-Latmani, R., Giammar, D. E., Conradson, S. D., Clark, D. L.
  AMER CHEMICAL SOC.2008

- **The single-layered morphology of supported MoS2-based catalysts - The role of the cobalt promoter and its effects in the hydrodesulfurization of dibenzothiophene** *APPLIED CATALYSIS A-GENERAL*
  Berhault, G., De la Rosa, M. P., Mehta, A., Yacaman, M. J., Chianelli, R. R.
  2008; 345 (1): 80-88

- **Ultrahigh-Resolution In Situ Diffraction Characterization of the Local Mechanics at a Growing Crack Tip in Nitinol**
  Robertson, S. W., Ritchie, R. O., Mehta, A., Gong, X., Pelton, A. R.
  edited by Berg, B., Mitchell, M. R., Proft, J.
  ASM INTERNATIONAL.2008: 35-+

- **Understanding the deformation and fracture of nitinol endovascular stents using in situ synchrotron X-ray microdiffraction** *ADVANCED MATERIALS*
  Mehta, A., Gong, X., Imbeni, V., Pelton, A. R., Ritchie, R. O.
  2007; 19 (9): 1183-?

- **Synchrotron X-ray reflectivity studies of nanoporous organosilicate thin films with low dielectric constants** *13th International Conference on Small-Angle Scattering*
  Oh, W., Hwang, Y., Shin, T. J., Lee, B., Kim, J., Yoon, J., Brennan, S., Mehta, A., Ree, M.
  WILEY-BLACKWELL.2007: S626–S630

- **Synchrotron and simulations techniques applied to problems in materials science: catalysts and Azul Maya pigments** *Symposium on Applications of Synchrotron Radiation to Materials*
  Chianelli, R. R., De la Rosa, M. P., Meitzner, G., Siadati, M., Berhault, G., Mehta, A., Pople, J., Fuentes, S., Alonzo-Nunez, G., Polette, L. A.
  WILEY-BLACKWELL PUBLISHING, INC.2005: 129–134