Taylor D. Sparks
Associate Professor
Department of Materials Science & Engineering
122 Central Campus Drive
University of Utah, Salt Lake City, 84112
Office: CME room 314
Email: sparks@eng.utah.edu
Phone: (801) 581-8632
Website: www.eng.utah.edu/~sparks

Publications: (underlined are undergraduate co-authors, * are Sparks Group members)

Submitted
1. Hasan M. Sayeed*, Wade Smallwood*, and Taylor D. Sparks “Quantifying the distribution of materials data types in scientific literature across text, tables, and figures” under review.
3. Federico Ottomano, Giovanni De Felice, Vladimir Gusev, and Taylor D. Sparks “Not as simple as we thought: A rigorous examination of data aggregation in materials informatics” under review.
6. Hasan M. Sayeed* and Taylor D. Sparks “Structural feature vectors derived from word embeddings of RoboCrystallographer descriptions” under review.
8. Pooya Elahi*, Jude A. Horsley*, and Taylor D. Sparks “Synthesis and Electrochemical Study of Multi-Phase, Multi-Species Ion Conductor Sodium β”-Alumina (BASE) + 20SDC Using a Vapor-Phase Process” under review.

Accepted or published
2. Travis Allen*, Jake Graser*, Ramsey Issa*, and Taylor D. Sparks “Machine learning predictions of low thermal conductivity: comparing TaVOS and GdTaO4” accepted to Advances in Applied Ceramics on October 19 2023.


57. (invited) Marcus Parry*, Samantha Couper, Aria Mansouri Tehrani, Anton O. Oliynyk, Jakoah Brgoch, Lowell Miyagi, and Taylor D. Sparks “Lattice strain and texture analysis of superhard Mo0.9W1.1BC and ReWCo.8 via diamond anvil cell deformation” Journal of Materials Chemistry A, 7, as part of the Emerging Investigators Special Issue, 24012-24018 (2019). [DOI]


62. Shadi Al Khatteeb* and Taylor D. Sparks “Pore-graded and conductor and binder free FeS2 films deposited by spray pyrolysis for high performance lithium ion batteries” Journal of Materials Research, 34, [14], 2456-2471 (2019). [DOI]


70. Dong Zhang, Anton O. Oliynyk, Gabriel M. Duarte, Abishek K. Iyer, Leila Ghadbeigi*, Steven K. Kauwe*, Taylor D. Sparks, and Arthur Mar “Not Just Par for the Course: Over 72 Quaternary Germanides RE4M2XGe4 (RE = La–Nd, Sm, Gd–Tm, Lu; M = Mn–Ni; X = Ag, Cd) and the Search for Intermetallics with Low Thermal Conductivity” Inorganic Chemistry, 57, [22], 14249-14259 (2018). [DOI]


94. Ram Seshadri and Taylor D. Sparks “Perspective: Interactive materials properties databases through aggregation of literature data” invited article, APL Materials 4, [5], 053206 (2016) [DOI].
99. Leila Ghadbeigi*, Iave K. Harada, Bethany Lettiere, and Taylor D. Sparks “Performance and resource considerations of Li-ion battery electrode materials” Energy and Environmental Science, 8, 1640-1650 (2015) [DOI]. Selected as rear cover article.
105. Wan Chunlei, Taylor D. Sparks, Pan Wei, David R. Clarke, "Thermal Conductivity of the Rare-Earth Strontium Aluminates," Journal of the American Ceramic Society, 93, [5], 1457-1460 (2010). [DOI]
106. Wei Liu, Yanyi Liu, Bin Li, Taylor D. Sparks, Xi Wei and Wei Pan ”Ceria (Sm3+, Nd3+)/carbonates composite electrolytes with high electrical conductivity at low temperature” Composites Science and Technology, 70, [1], 181-185 (2010). [DOI]

Patents:
Conference Proceedings: (underlined names are undergraduate co-authors)


Materialism Podcast Episodes (co-authors Taylor D. Sparks and Andrew Falkowski)

34. “Was the Challenger an Engineering Failure?,” Materialism Podcast August 2021.

**Non-Research Publications:**

1. **Taylor D. Sparks** “Materials Informatics: Reducing Trial & Error from the Discovery of New Materials” TEDxSaltLakeCity, September 22 2019, [published online at TED.com](https://www.ted.com)

2. **Taylor D. Sparks** “Opinion: Energy leadership scholars program provides unique research opportunities.” [published online](https://www.utahpolicy.com) on Utahpolicy.com, Utahpulse.com, and KSL.com, 10/1/2014.