

Biographical Sketch

Joseph Sottile

Professor, Mining Engineering; joint appointment in Electrical and Computer Engineering

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A. PROFESSIONAL PREPARATION

<u>College/University</u>	<u>Major</u>	<u>Degree & Year</u>
The Pennsylvania State University	Mining Engineering	BS, 1983
The Pennsylvania State University	Mining Engineering	MS, 1987
The Pennsylvania State University	Mining Engineering	PhD, 1991

B. ACADEMIC/PROFESSIONAL APPOINTMENTS

Professor of Mining Engineering (2008-present)

Associate Professor of Mining Engineering (1997-2008)

Director of Undergraduate Studies, Department of Mining Engineering, July 1999 – June 2020

Assistant Professor of Mining Engineering (1991-1997)

C. SELECTED PUBLICATIONS

- A. C. Gaunce, X. Wu, J. D. Mandeville, D. J. Hoffman, A. Khalsa, J. Sottile, R. Wellman, "DC Arc-Flash: Expanded Incident Energy Equation for 125V Substation Battery Backup Systems", accepted for publications in *IEEE Transactions on Industry Applications*, ISSN: 0093-9994 Online ISSN: 1939-9367 Digital Object Identifier: 10.1109/TIA.2020.3045691.
- Arya, S., Sottile, J. & Novak, T. "Numerical Modeling of a Flooded-Bed Dust Scrubber Integrated into a Longwall Shearer", *Mining, Metallurgy & Exploration* **37**, 1105–1119 (2020). <https://doi.org/10.1007/s42461-020-00240-7> (published May 26, 2020; August 2020 issue).
- V. Androulakis, J. Sottile, S. Schafrik and Z. Agioutantis, "Concepts for Development of Autonomous Coal Mine Shuttle Cars," in *IEEE Transactions on Industry Applications*, vol. 56, no. 3, pp. 3272-3280, May-June 2020, doi: 10.1109/TIA.2020.2972786.
- A. C. Gaunce, X. Wu, J.D. Mandeville, D.J. Hoffman, A.S. Khalsa, J. Sottile, and R.J. Wellman, "DC Arc Flash: Testing and Modeling Incidents in a 125V Substation Battery Backup System", in *IEEE Transactions on Industry Applications*, vol. 56, no. 3, pp. 2138-2147, May-June 2020, doi: 10.1109/TIA.2020.2971478.
- Arya, S., T. Novak, K. Saito, A. Levy, J. Sottile, "Empirical Formulae for Determining Pressure Drop Across a 20-Layer Flooded-Bed Scrubber Screen," *Mining, Metallurgy & Exploration*, Jun 2019, pp. 1169-1177, <https://doi.org/10.1007/s42461-019-0091-5>.
- Khan, A. I., T. Novak, J. Sottile, "Assessment of Lognormally Distributed Respirable Coal Dust Exposure via 95% Confidence Interval Calculation," *International Journal of intelligent Technologies and Applied Statistics*, vol. 12, no. 1, Mar 2019, pp 49-66.
- Arya, S. J. Sottile, J. Rider, J. Colinet, T. Novak, C. Wedding, "Design and Experimental Evaluation of a Flooded-Bed Dust Scrubber Integrated into a Longwall Shearer", *Powder Technology*, vol. 339, Nov 2018, pp. 487-496.

- E. Vazquez-Sanchez, J. Sottile, J. Gomez-Gil "A Novel Method for Sensorless Speed Detection of Brushed DC Motors," *Applied Sciences*, vol. 7, no. 1, January 2017, <http://www.mdpi.com/2076-3417/7/1/14>
- J. Sottile, T. Novak, A. Tripathi, "Best Practices for Implementing High-Resistance Grounding in Mine Power Systems," *IEEE Transactions on Industry Applications*, Nov/Dec 2015, pp. 5254-5260. D. C. Mazur, J. Sottile and T. Novak, "An Electrical Mine Monitoring System Utilizing the IEC 61850 Standard," in *IEEE Transactions on Industry Applications*, vol. 51, no. 2, pp. 1317-1325, March-April 2015.
- D. C. Mazur, J. Sottile and T. Novak, "An Electrical Mine Monitoring System Utilizing the IEC 61850 Standard," in *IEEE Transactions on Industry Applications*, vol. 51, no. 2, pp. 1317-1325, March-April 2015.

Other Significant Publications

- Sottile, J. "Chapter 5 – Mine Electrical Power," *Modern American Coal Mining: Methods and Applications*, 2013.
- Sottile, J. and T. Novak, "Chapter 27 – Electrical Safety" in *Concepts and Processes in Mine Health and Safety Management*, Society for Mining, Metallurgy, and Exploration, Inc., 2001, pp. 406-436.

D. SYNERGISTIC ACTIVITIES

- Member of the CDC NORA (National Occupational Research Agenda) Mining Sector Council, 2011 – present.
- Member of IEEE Industry Applications Society Executive Board and Chair of the IEEE Industry Applications Society Education Department 2011– 2015.
- Member of IEEE Industry Applications Society Executive Board and Chair of the IEEE Industry Applications Society Education Department 2003– 2006.
- Serve as one of the Associate Editors for the IEEE Transactions on Industry Applications, 1999 to present. Activities include chairing the paper review process for the IEEE Mining Industry Committee.

E. SELECTED RESEARCH CONTRACTS/GRANTS

- "Autonomous Docking of Face Haulage Mining Machinery in GPS-Denied Environments," National Institute of Occupational Safety and Health, Sep 1, 2020 – Aug 31, 2022, \$643,501, (PI: J. Sottile, Co-PIs: S. Schafrik and Z. Agioutantis).
- "Central Appalachian Regional Education Research Center (Mining Scope)," National Institute of Occupational Safety and Health, Jul 1, 2020 – Jun 30, 2021, \$157,740, (PI: J. Sottile, Co-PI: T. Novak).
- "Central Appalachian Regional Education Research Center (Mining Scope)," National Institute of Occupational Safety and Health, Jul 1, 2019 – Jun 30, 2020, \$148,204, (PI: J. Sottile, Co-PI: T. Novak).
- "Central Appalachian Regional Education Research Center (Mining Scope)," National Institute of Occupational Safety and Health, Jul 1, 2018 – Jun 30, 2019, \$156,969, (PI: J. Sottile).
- "Central Appalachian Regional Education Research Center (Mining Scope)," National Institute of Occupational Safety and Health, Jul 1, 2017 – Jun 30, 2018, \$179,162, (PI: J. Sottile, Co-PI: R. Honaker).
- "Autonomous Underground Mining Systems to Improve Safety - Intelligent Coal Mining," Alpha Foundation for the Improvement of Mine Safety and Health, \$2,195,160, Dec 1, 2017 – Mar 1, 2022, \$2,195,160, (PI: Z. Agioutantis, Co-PIs: S. Schafrik, J. Sottile).