

Dr. Daniel Tao

Professor
Department of Mining Engineering
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Research Interest

Fine particle processing; froth flotation; dewatering; surface chemistry of metals and minerals; coal cleaning and pelletization; waste recycling and utilization; corrosion prevention.

Education

Ph.D. (Mining and Minerals Engineering), Virginia Polytechnic Institute and State University, 1994
M.Sc. (Minerals Processing Engineering), China University of Mining and Technology, 1986
B.Sc. (Minerals Processing Engineering), Beijing University of Science and Technology, 1983

Professional Experience

2008- Distinguished Mining Engineering Professor, University of Kentucky, Lexington, KY
2008- Professor, the Department of Mining Engineering, University of Kentucky.
2004-08 Associate Professor, the Department of Mining Engineering, University of Kentucky, Lexington, Kentucky.
1998-04 Assistant Professor, the Department of Mining Engineering, University of Kentucky, Lexington, Kentucky.
1996-98 Research Engineer, Center for Applied Energy Research, University of Kentucky, Lexington, Kentucky
1994-96 Senior Research Associate, Center for Coal and Minerals Processing, Blacksburg, VA.
1990-94 Research Assistant, Department of Mining and Minerals Engineering, Virginia Polytechnic Institute and State University
1989-90 Visiting Scholar, Center for Coal and Minerals Processing, Virginia Polytechnic Institute and State University, Blacksburg, Virginia
1986-89 Lecturer, China University of Mining and Technology, Xuzhou, China

Professional Activities

Member, Society of Mining, Metallurgy, and Exploration (SME)
Member, American Chemical Society (ACS)
Member, American Institute of Chemical Engineers (AIChE)
Member, American Filtration Society (AFS)

Awards

SME Robert Stefanko Best Paper Award, 2009.
Mining Engineering Foundation Distinguished Professor, 2008.
Wethington Award, University of Kentucky, 2004, 05, 06, 07, 08, 09, 10.
Senior Scientist Award, American Filtration Society, 2005
Outstanding Professor, Mining Engineering Department, 2004.

Recent Major Publications (*: corresponding author)

1. Kou, J. and Tao*, D., 2010. "Fatty Acid Collectors for Phosphate Flotation and Their Adsorption Behavior Using QCM-D", *International Journal of Mineral Proces.*, 95(1):1-9.
2. Bada, S., Tao, D., Falcon, Honaker, R., L.M., Falcon, R.M.S., 2010. "A Study of Rotary Tribo-Electrostatic Separation of South African Fine Coal", *International Journal of Coal Preparation and Utilization*, 30(2-5):154-172.
3. Kou, J., Tao*, D., and Xu, G., 2010. "A Study of Adsorption of Dodecylamine on Quartz Surface Using Quartz Crystal Microbalance with Dissipation", *Colloids and Surfaces A*, 368:75-83.
4. Tao*, D., Zhou, X. Dopico, P., Hines, J., and Kennedy, D., 2010. "Evaluation of Novel GP Clay Binders in Iron Ore Flotation," *Journal of Minerals and Metallurgical Processing*, 27(1):42-46.
5. Kor, M., Abkhoshk, E., Tao, D., Chen⁺ G.L., Modarres,H., 2010. "Modeling and optimization of high chromium alloy wear in phosphate laboratory grinding mill with fuzzy logic and particle swarm optimization technique", *Minerals Engineering*, 23:713-719.
6. Tao*, D., Parekh, B.K., and Zhang, P., 2010. "Pilot Scale Demonstration of Deep Cone Paste Thickening Process for Phosphatic Clay/Sand Disposal", *Separation Science and Technology*, 45(10).
7. Tao*, D. Zhou, X., Kennedy, D., Dopico P., and Hines J., 2010. "Improved Phosphate Flotation Using Clay Binder", *Separation Science and Technology*, 45(5):604-609.
8. Tao*, D., Fan⁺, M., and Jiang⁺, X., 2009. "Dry coal fly ash cleaning using rotary triboelectrostatic separator", *Mining Science and Technology*, 19:642-647.
9. Tao*, D., Yu⁺, S., Zhou⁺, X., and Honaker, R., Parekh, B.K., 2008. "Picobubble Column Flotation of Fine Coal," *Coal Preparation*, 28(1):1-14.
10. Fan⁺, M. and Tao, D.*, 2008. "A Study on Picobubble Enhanced Coarse Phosphate Froth Flotation," *Separation Science and Technology*, 43(1):1-10.
11. Youjun Tao, Jiongtian Liu, Samuel Yu and Daniel Tao*, 2007. "Picobubble Enhanced Fine Coal Flotation," *Separation Science and Technology*, 41:3597-3607.
12. Tao*, D., Chen, G.L., Fan, M.M., Zhou, X.H., Zhao, C., Aron, M., and Wright, J. , 2007. "Coal and Potash Flotation Enhancement by Using Clay Binders", *Canadian Metallurgical Quarterly*, 46(3):243-250.
13. Tao*, D., Chen, G.L. and Parekh, B.K., 2007. "An Electrochemical Study of Corrosive Wear of Phosphate Grinding Mill", *Journal of Applied Electrochemistry*, 37(2):187-194.
14. Allen, B.L. and Tao*, D., 2006. "Asphalt Emulsion Enhanced Fine Coal Dewatering," *Filtration*, 6(3):235-241.
15. Fan⁺, M., Chen, Q., Zhao, Y., Tao, D., Luo, Z., Zhang, X., Yang, G., 2006. "Fine Coal Dry Classification and Separation", *Minerals & Metallurgical Processing Journal*, 23(1):17-21.
16. Chen G. and Tao*, D., 2005. "An Experimental Study of Stability of Oil/Water Emulsion for Preparation of Oil-water-coal Slurry," *Fuel Processing Technology*, 86:499-508.
17. Chen, G.L., Tao* D., Ren, H., Qiao J.K., 2005. "An Investigation of Niobite Flotation with Octyl Diphosphonic Acid as Collector", *Inter. J. of Miner. Process*, 76:111-122.
18. Chen, G. and Tao*, D., Parekh, B.K., 2005. "Corrosion Protection of Mild Carbon Steel Media in Phosphate Grinding Mill Using Impressed Current Technology," *Minerals Engineering*, 18:481-488.
19. Honaker, R. Q., Taulbee, D., Parekh, B. K., Tao, D., and Patil, D., 2004, "Premium Fuel Production from Coal and Timber Waste," *Miner. & Metal.l Process. J.*, 21(4):183-188.
20. D. Tao, G.L. Chen and B.K. Parekh, 2004. "Statistical Analysis of Wear Rate of Phosphate Grinding Mill," *Corrosion*, 60(11):1072-1081.
21. Chen, G. and Tao*, D., 2004. "Effect of Solution Chemistry on Flotability of Magnesite and Dolomite," *International Journal of Mineral Processing*, 74:343-357.
22. Ren, H., Ji, F., Chen, G., and Tao*, D., 2004. "An Investigation of Fersmite Flotation," *International Journal of Mineral Processing*, 74:271-279.