

NEW MEMBER OF THE EDITORIAL BOARD



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PERSONAL DETAILS

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CAREER OBJECTIVE

Research in the field of mineral processing
as well as applied surface and colloidal
chemistry

EDUCATION

D.Sc. Technical University of Wroclaw,
Wroclaw, Poland, 1991

Ph.D. Technical University of Wroclaw,
Wroclaw, Poland, 1977

M.S. Technical University of Wroclaw,
Wroclaw, Poland, 1973

Ph.D. DISSERTATION

Title: Thermodynamics of surface
phenomena at the solid / aqueous solution
interface

Supervisor: Professor Dr.J.S.Laskowski

D.Sc. (HABILITATION) in inorganic
chemistry: surface and colloid chemistry

Full Professor (granted by the President of
Poland) – in technical sciences (2002)

PROFESSIONAL EXPERIENCE

1973-1974 Junior Assistant, Technical
University of Wroclaw

1974-1975 Assistant, Technical University
of Wroclaw

1975-1977 Assistant Lecturer, Technical
University of Wroclaw

1977-1996 Assistant Professor, Technical
University of Wroclaw

1978-1979 Postdoctoral Research
Engineer, Department of Material Science and
Mineral Engineering, University of California
Berkeley, USA

1984-1985 Visiting Scientist, Chemical
Engineering Department, Iowa State
University, Ames, Iowa, USA

1988-1990 Visiting Scientist, Chemical Engineering Department, Iowa State University, Ames, Iowa, USA

1990 Visiting Scientist, Department of Material (3 months) Science and Mineral Engineering, University of California Berkeley, USA

1991 Visiting Scientist, Chemical Engineering Department, Iowa (3 months) State University, Ames, Iowa, USA

1994 Visiting Scientist, Chemical Engineering Department, Iowa (6 months) State University, Ames, Iowa, USA

1996-2002 Professor, Institute of Mining Engineering, Technical University of Wrocław, Poland

2000 Visiting Scientist, Chemical Engineering Department, Iowa (3 months) State University, Ames, Iowa, USA

2001 Visiting Professor, LEM, Nancy, France (3 months)

2002 - Full Professor, Technical University of Wrocław, Poland

LIST OF SELECTED PAPERS

1. J. Drzymala, J. Serkies, On the Lechosos Opals and Chrysoprases in the Weathering Zone of Serpentinities from Szklary (Lower Silesia), *Bull.Acad.Sci., des Science de la Terrie*, XXI, No. 2, 111-117(1973).

2. J. Lekki, J. Laskowski, J. Szczypa, J. Drzymala, Physical-chemical Models in the Research of Floatability of Minerals, XII IMPC, Sao Paulo 1977, No.2, 304-324(1980).

3. J. Drzymala, J. Lekki, Point of zero charge of metal oxides and hydroxides, *Prace Naukowe Instytutu Chemii Nieorganicznej i Metalurgii Pierwiastkow Rzadkich Politechniki*, Studia i Materiały Nr 16, 1-56(1979), in Polish.

4. J. Drzymala, J. Lekki, J. Laskowski, Surface Dissociation Constants for Solid Oxide-Aqueous Solution System, *Colloid and Polymer Sci.*, 257, 768-772(1979).

5. J. Drzymala, Adsorption Isotherm of Potential Determining Ions at the Oxide-Aqueous Solution Interface, *Polish Journal of Chemistry*, 53, 1809-1820(1979).

6. J. Drzymala, Determination of Concentration of Hydroxyl and Metal Hydroxyl Groups on the Surface of Oxides Based on Crystallographic Lattice Parameters, *Wiadomosci Chemiczne*, 33, 101-121(1979), in Polish.

7. J. Drzymala, D.W. Fuerstenau, Selective Flocculation of Hematite in the Hematite-Quartz-Ferric Ions-Polyacrylic Acid System. Part I. Activation and Deactivation of Quartz, *Inter.Min.Process.Journal*, 8, 265-277(1981).

8. J. Drzymala, J. Laskowski, Application of Chelating Agents in Flotation, *Fizykochemiczne Problemy Mineralurgii*, 13, 39-64(1981), in Polish.

9. F. Letowski, S. Michalak, G. Sokalska, J. Drzymala, J. Mordalski, Utilization of Wastes from Acid Leaching of Copper Concentrates, Polish Temporary Patent No. 110494, 1982, in Polish.

10. M. Kielkowska, J. Lekki, J. Drzymala, Flotation of Germanium n and p with Potassium Ethyl Xanthate, *Inter. Min. Process. Journal*, 9, 145-156(1982).

11. J. Drzymala, A. Luszczkiewicz, P. Simiczjew, Hercynite-Pleonaste from Ilmenite-Magnetite Rocks of Krzemianka (NE Poland). *Miner. Polonica*, 13(2), 33-40(1982).

12. J. Drzymala, A. Luszczkiewicz, P. Simiczjew, Flotation Study on Hercynite High-Hercynite Ilmenite Ore, *Inter. Miner. Process. Journal* 10, 289-296(1983).

13. J. Drzymala, A. Luszczkiewicz, Micro-laboratory Study on Magnetic, Gravity, and High-tension Separation of Hercynite and Pleonaste from Low Grade Ilmenite Concentrates, *Inter.Miner.Process.Journal*, 14, 233-238(1985).

14. J. Drzymala, M.M. Kielkowska, Infrared Spectrophotometric Analysis of Acidified Aqueous Sodium Oleate Solutions,

Spectrochimica Acta, 41A, No.7, 949-950(1985).

15. J. Drzymala, L. Krajczyk, Electron Microscopic Observation of Fine Poly-dispersed Emulsion, Colloids and Surfaces, 15, 249-253(1985).

16. J. Drzymala, Chemical Equilibria in the Oleic Acid-Water-NaCl System, J.Colloid Interface Sci., 108, 257-263(1985).

17. J. Drzymala, Potentiometric Titration of Sodium Oleate in Dilute Aqueous Solution, J.Colloid Interface Sci., 107, 442-445(1985).

18. J. Drzymala, Hydrophobization of Solids in Aqueous Oleate Solutions, Fizykochemiczne Problemy Mineralurgii - Physicochemical Problems of Mineral Processing, 18, 63-84(1986), in Polish.

19. G.C.C. Yang, J. Drzymala, Aqua-oleophilicity and Aqua-oleophobicity of Solid Surfaces, Colloids and Surfaces, 17, 313-315(1986).

20. J. Drzymala, R. Markuszewski, T.D. Wheelock, Selective Oil Agglomeration of Graphite in the Presence of Pyrite, Coal Preparation, 3, 89-98(1986).

21. J. Drzymala, R. Markuszewski, T.D. Wheelock, Influence of Air on Oil Agglomeration of Carbonaceous Solids in Aqueous Suspension, Inter. Miner. Process. Journal, 18, 277-286(1986).

22. J. Drzymala, D.W. Fuerstenau, Adsorption of Polyacrylamide, Partially Hydrolyzed Polyacrylamide and Polyacrylic Acid on Ferric Oxide and Silica, Process Technol.Proc., (Flocculation in Biotechnology and Separation Science), 45-60 (1987).

23. J. Drzymala, An Estimation of the Surface Ionization Constant of Oleic Acid in Aqueous Sodium Chloride Solution, Colloid and Polymer Sci., 265, 613-618(1987).

24. J. Drzymala, J. Lekki, M. Kielkowska, A Study of the Germanium-Sodium Oleate Flotation System, Powder Technology, 52, No.3, 251-256(1987).

25. J. Drzymala, J. Lekki, Application of Flotometry for Characterizing Flotation in the Presence of Particles Aggregation, Minerals Engineering, 1(4), 327-336(1988).

26. J. Drzymala, R. Markuszewski, T.D. Wheelock, Agglomeration with Heptane of Coal and other Materials in Aqueous Suspensions, Minerals Engineering, 1(4), 351-358(1988).

27. J. Drzymala, J. Lekki, Mechanical, Contactless, and Collector Flotation in the Hallimond Tube, J.Colloid Interface Sci., 130, 197-204(1989).

28. J. Drzymala, J. Lekki, Flotometry-Another Way of Characterizing Flotation, J.Colloid Interface Sci., 130, 205-210(1989).

29. J. Drzymala, Chemistry of Oleic Acid-Water-NaCl System vs. pH at 25C. Surfactants in Solution, V7, K.L.Mittal Ed., Plenum Press, New York, 483-496(1990).

30. J. Lekki, J. Drzymala, Flotometric Analysis of Collectorless Flotation of Sulfide Materials, Colloids and Surfaces, 44, 179-190(1990).

31. J. Drzymala, T.D. Wheelock, Determining the Oil Agglomeration Characteristics of a Coal Suspension by Monitoring Turbidity Changes, 3rd International Conf.on Process. and Utiliz. of High-Sulfur Coals, Elsevier, Amsterdam, 289-300(1990).

32. J. Drzymala, R. Markuszewski, T.D. Wheelock, Oil Agglomeration of Sulfurized Pyrite, Minerals Engineering, 4,(2),161-172(1991).

33. J. Lekki, J. Drzymala, Flotometric Investigation of Hydrophobic Sulfide-diethyl Dixantogen System, Colloids and Surfaces, 55, 271-27(1991).

34. J. Drzymala, R. Markuszewski, T.D. Wheelock, Pyrite Suppression in Oil Agglomeration of Coal, 1991 Intern.conf.on Coal Science Proc., Butterworth, London, 1005-1008(1991).

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- Agglomeration of Fine-size Coal, Coal Preparation, 10, 189-B 201(1992).
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37. J. Drzymala, T. Chmielewski, K.L. Wolters, D.H. Birlingmair and T.D. Wheelock, Microflotation Measurements Based on Modified Hallimond Tube, Trans. IMM, Sec.C., 101, C17-C24(1992).
38. J. Drzymala, J. Lekki, A Contribution to Understanding Oleate Flotation of Minerals, IV International (Turkish) Mineral Processing Symposium Antalya, 213-225(1992).
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40. J. Drzymala, T.D. Wheelock, Effect of Oxidation and Thioglycolic Acid on Separation of Coal Pyrite by Selective Oil Agglomeration, Coal Preparation, 14, 1-11(1994).
41. J. Drzymala, Hydrophobicity and Collectorless Flotation of Inorganic Materials, Advances in Colloid and Interface Sci., 50, 143-186(1994).
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44. J. Drzymala, Interaction of Particles during Oleate Flotation in a Mono-bubble Hallimond tube, Minerals Engineering, 8(9), 1023-34, 1995.
45. J. Drzymala, J. Bigosinski, Collectorless Flotation of Sulfides Occurring in the Fore-Sudetic Copper Minerals Deposit of SW Poland, Mineralogia Polonica, 26(1), 63-73, 1995.
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47. J. Drzymala, The Importance of Contact Angle Equal to 90 Degrees in Interfacial Processes, Proc. International Conference on Analysis and Utilization of Oily Wastes, AUZO'96, Gdansk, Poland, 393-396, 1996.
48. J. Drzymala, T.D. Wheelock, Air Promoted Oil Agglomeration of Moderately Hydrophobic Coals. 2. Effect of Air Dosage in a Model Mixing System, Coal Preparation, 18, 37-52, 1997.
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50. J. Drzymala, Entrainment of particles with density between 1.01 and 1.10 g/cm³ in a monobubble Hallimond tube, Minerals Engineering, 12 (3), 329-331 (1999).
51. J. Drzymala, Flotometric hydrophilicity of coal particles, Mining Science and Technology, H. Xie, T.S. Golosinski (eds), Proc. '99 Int. Symp. Mining and Technology, Beijing, China, Balkema, Rotterdam, 533-537(1999).
52. J. Drzymala, Z. Sadowski, L. Holysz E. Chibowski, Ice/water interface, zeta potential, point of zero charge, and hydrophobicity, J. Colloid Interface Sci., 220, 229-234 (1999).
53. J. Drzymala, J. Kapusniak, P. Tomasik, Amino acid dextrans as selective depressants in flotation of chalcocite and galena, Physicochemical Problems of Mineral

Processing (Fizykochemiczne Problemy Mineralurgii), 34, 101-110(2000)

54. J. Drzymala, J. Kapusniak, P. Tomasik, A method of production of copper concentrates rich in chalkozyn, Polish patent application, 2000

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57. J. Drzymala, Study of the ice-water interface, Encyclopedia of Surface and Colloid Science, 4892-4898, 2002

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64. J. Drzymala, E. Hrycina, Entrainment of particles in the Mechanobr laboratory flotation machine, Prace Naukowe Instytutu Gornictwa Politechniki Wroclawskiej 106, Studia i materialy 30, 21-29, 2004

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68. Drzymala, J., T.D. Wheelock, Oil agglomeration of solid particles suspended in water by means of organic liquids, Proc. Conf .Oils and Enviroment, AUZO 2005, Gdansk University of Technology, 98-

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71. Ahmed, H. A.M., Drzymala, J., Direct material-reagent contact approach for upgrading difficult-to-float coals, *Prace Naukowe Instytutu Górnictwa Politechniki Wrocławskiej* 110, Konferencje 42, 355-364, 2005
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73. Drzymala, J., Atlas of upgrading curves used in separation and mineral science and technology, *Physicochemical Problems of Mineral Processing*, 40, 19-29, 2006
74. Trong Dang-Vu, Hupka, J., Drzymala, J., Impact of roughness on hydrophobicity of particles measured by the Washburn method, *Physicochemical Problems of Mineral Processing*, 40, 45-52, 2006
75. J. Drzymala, E. Mielczarski, J. A. Mielczarski, Adsorption and flotation of hydrophilic materials in the presence of hydrocarbon polyethylene glycol ethers, *Colloids and Surfaces, A., Physicochem. Eng. Aspects*, 308, 2007, 111-117
76. J. Zawala, J. Drzymala, K. Malysa, Natural hydrophobicity and flotation of fluorite, *Physicochemical Problems of Mineral Processing*, 41, 5-11, 2007
77. J. Drzymala, Atlas of upgrading curves used in separation and mineral science and technology (Part II), *Physicochemical Problems of Mineral Processing*, 41, 27-35, 2007
78. J. Drzymala, J. Kapusniak, P. Tomasik, A method of production of copper concentrates rich in chalcocite, *Polish Patent PL 195693 B1*, 2007
79. J. Drzymala, *Mineral Processing. Foundations of theory and practice of minerallurgy*, Oficyna Wyd. PWr., Wrocław, 2007, 507 pages, <http://www.dbc.wroc.pl/Content/2070/Drzymala.pdf>
80. Jan Drzymala Atlas of upgrading curves used in separation and in mineral science and technology, *Physicochemical Problems of Mineral Processing*, 42 (2008) 75-84
81. J. Zawala, J. Drzymala, K. Malysa, An investigation into the mechanism of the three-phase contact formation at fluorite surface by colliding bubble, *International Journal of Mineral Processing*, 88(2008) 72-79
82. D. Szyszka, J. Drzymala, P. Resiak, E. Mielczarski, J. Mielczarski, Entrainment of quartz in flotation tests with frothers, XXIV IMPC, Beijing, China, 2008, v.1.1068-1073
83. B. Grabowski, J. Drzymala, 2008. Graphite flotation in the presence of sodium acetate, *Annales Universitatis Mariae Curie-Skłodowska - Lublin - Polonia*, Vol. LXII, 6, Section AA, 58-72
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88. Z. Konopacka, J. Drzymala, 2010, Types of particles recovery—water recovery entrainment plots useful in flotation research, *Adsorption*, 16 (4), 313-320
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96. P. B. Kowalczyk, J. Drzymala, Surface flotation of particles on liquids. Principles and applications, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 393 (2012), 81-85
97. P. Kowalczyk, J. Drzymala, Letter to Editor on Detachment of coarse particles from oscillating bubbles—The effect of particle contact angle and medium viscosity” by D. Xu, I. Ametov and S.R. Grano (*Int. J. Miner. Process.* 101(1–4), 50–57, *International Journals of Mineral Processing*, 104-105 (2012) 80-81
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99. J. Drzymala, J. Lyklema, Surface tension of aqueous electrolyte solutions. Thermodynamics, *J. Phys Chem. A.*, 116(25), 6465-72, 2012
100. H.A.H.Ahmed, J. Drzymala, Upgrading difficult-to-float coal using microemulsion, *Minerals and Metallurgical Processing*, 29(2), 88-96, 2012
101. J. Drzymala, P. B. Kowalczyk, D. Foszcz, A. Muszer, T. Henc, A. Luszczkiewicz, Analysis of separation results by means of the grade-recovery Halbich upgrading curve, *IMPC, New Delhi*, 2012, paper 127
102. T. Ratajczak, J. Drzymala, Excess interfacial energy change of solid/aqueous salt solution system with increasing salt concentration at a constant charge-determining ion activity based on the Gibbs equation and ionic components of charge, *Central European Journal of Chemistry*, 10(6), 2012, 1927-1932