

FIONA M. DOYLE

Donald H. McLaughlin Professor of Mineral Engineering

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EDUCATION

B.A. Metallurgy and Materials Science, University of Cambridge, England, 1978

M.A. Natural Sciences, University of Cambridge, England, 1982

M.Sc.(Eng.) Extractive Metallurgy (awarded with Distinction), Imperial College of Science and Technology, University of London, England, 1979

Ph.D., Hydrometallurgy, Imperial College of Science and Technology, University of London, England, 1983. Thesis title: "Hydrolytic Stripping of Mixed Metal Carboxylates"

Diploma of Membership of Imperial College (D.I.C.) 1979 and 1983

PROFESSIONAL EXPERIENCE

1979-1982: Teaching Assistant, Imperial College of Science and Technology

1983: Graduate Trainee, Davy McKee, Metals and Minerals Division, Stockton-on-Tees, England

1983-1988: Assistant Professor, Department of Materials Science and Mineral Engineering, University of California, Berkeley

1988-1994: Associate Professor, Department of Materials Science and Mineral Engineering, University of California, Berkeley

1990 (Fall): Acting Associate Dean, Special Programs, College of Engineering, University of California, Berkeley

1994-present: Professor, Department of Materials Science and Engineering, University of California, Berkeley

2001-Aug 2002: Director, Institute for Environmental Science and Engineering, University of California, Berkeley (Acting Director July 2001-June 2002).

2002-2005: Chair, Department of Materials Science and Engineering, University of California, Berkeley

2005-2008: Associate Dean for Academic Affairs, College of Engineering, University of California, Berkeley

2006-July 2007: Acting Dean, College of Engineering, University of California, Berkeley

2005-2009: Executive Associate Dean, College of Engineering, University of California, Berkeley

2009-10: Vice Chair, Berkeley Division of the Academic Senate, University of California, Berkeley

2010-11: Chair, Berkeley Division of the Academic Senate, University of California, Berkeley

AWARDS AND HONORS

1993 Distinguished Lecturer in Hydrometallurgy, University of British Columbia, Vancouver, Canada.

Plenary Lecturer, XVI Encontro Nacional de Tratamento de Minérios e Hidrometalurgia, Rio de Janeiro, Brazil, September 1995.

National Institute for Resources and Environment, Agency of Industrial Science and Technology, MITI, Tsukuba, Japan, visiting fellowship, March 1996.

TMS Distinguished Service Award, 1998.

Donald H. McLaughlin Professor of Mineral Engineering, Department of Materials Science and Engineering, University of California, Berkeley, 1998-present
TMS Extraction and Processing Distinguished Lecturer, 2007

PROFESSIONAL AFFILIATIONS

American Institute of Mining, Metallurgical and Petroleum Engineers:
The Minerals, Metals and Materials Society (TMS)
Society for Mining, Metallurgy, and Exploration, Inc. (SME)
Institution of Materials, Minerals and Mining
The Electrochemical Society
Chartered Engineer, Great Britain

PROFESSIONAL ACTIVITIES

Intramural (selected activities only)

Committee on Courses of Instruction, Academic Senate, University of California, Berkeley, 1989-1991,
Chair, Aug. 1990-Dec. 1991.
Committee on Educational Policy, Academic Senate, University of California, Berkeley, 1992-1995.
Area Advisory Panel - Engineering, University of California, Berkeley, Spring 1993.
Search committee, Dean of the College of Engineering, University of California, Berkeley, 1995-1996.
Committee on Special Scholarships, Academic Senate, University of California, Berkeley, 1995-1999
Chair, Committee for Jane Lewis Fellowships in Mineral Engineering, 1997-2003
College of Engineering Strategic Planning Committee, 1997 and 1998-1999.
Lead PI, Berkeley Abandoned Mines Group, Earth Resources Center (1998-)
Chair, Advisory Board of Institute for Environmental Science and Engineering, University of California,
Berkeley, 2000-2001
Chair, Faculty Search Committee, Department of Materials Science and Engineering, University of
California, Berkeley, 2000-2002
Committee on Admissions, Enrollment and Preparatory Education, Academic Senate, University of
California, Berkeley, (2000-2004)
University Welfare Committee, Academic Senate, University of California, Berkeley, 2004-2005
Graduate Council, Academic Senate, University of California, Berkeley, 2005-2006
Chancellor's Advisory Committee on Student Mental Health, University of California, Berkeley, 2006-
2009.
Search committee, Vice Chancellor for Equity and Inclusion, University of California, Berkeley, 2006-07.
Search committee, University Registrar, University of California, Berkeley, 2007-08 (Chair).
Search committee, Dean of the College of Chemistry, University of California, Berkeley, 2007-08.
Task force on Enrollment, University of California, Berkeley, 2009-10.
Co-chair, Committee on Undergraduate Student Learning Initiative, University of California, Berkeley.
2009-10.

Extramural

Member, Berkeley Mining Waste Study Team (Commissioned by California State Legislature), 1987-88.
Review Panels for National Science Foundation and Department of Energy
Member, Expert Panel for Non-Conventional Bioprocessing Long Term Research Initiative at Idaho
National Engineering Laboratory, July 1992.
Member, Expert Panel on Acid Generation from Non-Coal Mining Wastes, U.S. Environmental Protection
Agency, July 1992.

Facilitator, Technical Advisory Committee on Abandoned Mines, State Water Resources Control Board
Review of Nonpoint Pollution Source Management in California, 1994.
Scientific Committee, Centro de Valorização de Recursos Minerais, Lisboa Codex, Portugal, 1998-2000.
Reviewer for National Science Foundation; Site Visit Team for Engineering Research Center for Particle
Science and Technology at the University of Florida, Gainesville (1998-2000).
Member, National Materials Advisory Board, National Academies, May 2002-December 2007.
External Advisory Board, Department of Materials Science and Engineering, Cornell University (2006- 8)
Chair, Materials Forum 2007, "Corrosion Education in the 21st Century, National Materials Advisory
Board, March 30, 2007.
External Review Committee (chair), Department of Chemical Engineering and Materials Science,
University of Southern California, April 2007.
National Academies study committee on Assessing Corrosion Education, 2007-2008
External Review Committee (chair), Department of Materials Science and Engineering, University of
Tennessee, Knoxville, April 2008.
External Appraiser, MAsc/MEng/PhD program in Chemical Engineering and Applied Chemistry at
University of Toronto, for Ontario Council on Graduate Studies.
External Reviewer, Proposed BS program at Asia Institute of Technology, Bangkok, Thailand, June 2009.

Editorial Boards

Editorial Board, Mineral Processing and Extractive Metallurgy Review (Co-editor, 1990-1998, Interim
Editor-in-Chief, 1998-1999)
Editorial Board, Hydrometallurgy (1986- present)
Board of Review, Metallurgical Transactions B (1985-1991, 1994-1999, 1996 Chair)
Editorial Board, International Journal of Mineral Processing (1999-present)

Professional Society Activities

TMS/SME Hydrometallurgy/Chem. Processing Committee (1986-1989) (1988-89 Chair)
TMS Aqueous Processing Committee, (1988-1993) (1989-90 Chair)
TMS/EPD Programming Chair (1992-95)
TMS/EPD Executive Committee (1989-1995)
TMS Copper, Nickel, Cobalt Committee (1989-2000)
TMS Education and Professional Affairs Committee (1989-1995)
TMS International Activities Committee (1991-1997)
TMS Reactive Metals Committee (1989-2000)
TMS Student Affairs Committee (1989- 92)
TMS Nominating Committee (1992-94)
TMS/EPD Waste Treatment and Minimization Committee (1994-2000)
TMS Extraction and Processing Awards Committee (1994-1997, 1996-97 Chair)
SME Milton E. Wadsworth Award Committee (2002-2005; 2007-2010)
SME Information Publication Committee (2003-2006)
AIME Frank F. Aplan Award Committee (2006-2009, 2008-09 Chair)
ASM Int. International Materials Reviews Committee (2007-2010)
SME Arthur F. Taggart Award Committee (2010-present)

Organized numerous technical sessions at meetings, and chair or member of organizing committees for:
Biotechnology in Minerals and Metal Processing, Society of Mining Engineers, 1989
Innov. in Materials Processing Using Aqueous, Colloid and Surface Chemistry, TMS, 1989
Western Regional Symposium on Mining and Mineral Processing Wastes, May-June, 1990, Berkeley, CA
Cleaner Environment '92, SME, 1992
Milton E. Wadsworth Symposium on Hydrometallurgy, August 1993, Salt Lake City, UT
First International Conference on Processing Materials for Properties, MMIJ-TMS, Hawaii, 1993
Electrochemistry in Mineral and Metal Processing IV, The Electrochemical Soc., Los Angeles, May 1996
Global Symposium on Recycling, Waste Treatment & Clean Technology, REWAS '99, San Sebastian, Sept. 1999.
Electrochemistry in Mineral and Metal Processing V, The Electrochemical Society, Toronto, May 2000
PMP 2000, Second International Conference on Processing Materials for Properties, MMIJ-TMS, San Francisco, CA, November 2000.
Electrochemistry in Mineral and Metal Processing VI, The Electrochemical Society, Paris, France, May 2003.
Chemical-Mechanical Polish (CMP) Planarization for ULSI Multilevel Interconnection (CMP-MIC) IX, Marina del Rey, CA, February 2004.
Chemical-Mechanical Polish (CMP) Planarization for ULSI Multilevel Interconnection (CMP-MIC) X, Fremont, CA, February 2005
Electrochemistry in Mineral and Metal Processing VII, The Electrochemical Society, Denver, CO, May 2006.
Jim Evans Honorary Symposium, TMS Annual Meeting, Seattle, WA, February 2010.
Electrochemistry in Mineral and Metal Processing VIII, The Electrochemical Society, Vancouver, Canada, April 2010.

Selected Consulting:

Placer Dome U.S., Inc., San Francisco, CA
Delphic Associates, Falls Church, VA
Committee to Save the Mokelumne/Sierra Club Legal Defense Fund (*pro bono*)
Idaho National Engineering Laboratory
Unocal, Los Angeles, CA
Forensic Management Associates, Inc, San Mateo, CA/Lempres and Wulfsberg, Oakland CA
BHP, San Francisco, CA
Alcoa Technical Center, Pittsburgh, PA
General Electric Company Corporate Research and Development, Schenectady, NY
Farella, Braun and Martel, San Francisco, CA
CalFed Bank, San Francisco, CA
Rodel, Inc., Newark, DE
Rivkin Radler, New York, NY
Viacom

RESEARCH INTERESTS

Aqueous and surface chemistry in the processing and behavior of minerals, materials, wastes and effluents. Equilibrium, kinetics, mass transfer and mechanisms in aqueous, organic and solid systems. Leaching and transformation of minerals. Hydrolysis, precipitation and coprecipitation. Solvent extraction and organic phase reactions. Novel separations processes. Electrochemistry of sulfide minerals. Chemical thermodynamics. Applications in hydrometallurgy, materials science, environmental engineering and waste management, and earth sciences.

STUDENTS AND SCHOLARS ADVISED

Graduate Students

- Niraj Ranjan, M.S., May 1985, "Mathematical modeling of zinc oxide leaching in dilute acid solutions"
- Didier Pouillon, M.S., December 1985, "Coextraction of base metals with iron during solvent extraction with carboxylic acid"
- Hernando Arauco, M.S., May 1986, "Hydrolysis and precipitation of iron during pressure leaching of zinc sulphide materials"
- Wumao Ye, Ph.D., December 1989, "Hydrothermal precipitation of zirconia powders from single and mixed Zr(IV) carboxylate solutions"
- Anna Marie Cook-Polek, M.S., May 1990, "Flow of decane through a natural fracture in siltstone; deviations from predicted behavior"
- Jung Hoon Yoon, M.S., May 1990, "Precipitation of yttrium and rare earth powders from aqueous solutions and emulsions"
- Saskia Duyvesteyn, M.S., May 1994, "Removal of trace metal ions from dilute solutions by ion flotation: cadmium-dodecylsulfate and copper-dodecylsulfate systems"
- Abbas Hussain Mirza, Ph.D., May 1994, "Kinetics and mechanisms of pyrite (FeS₂) oxidation in the formation of acid mine drainage"
- Donna Bodine, M.S., 1995, "Effect of oxidation on the removal of Cu²⁺, Cd²⁺ and Mn(VII) from dilute aqueous solutions by Upper Freeport bituminous coal"
- Ali S. Saleh, M.Eng., 1995 "Precipitation stripping of zinc-loaded D2EHPA using CO₂ sparging"
- Miguel N. Herrera, Ph.D., December 1994, "Further studies on the effects of oxidation on the surface properties of coal and coal pyrite"
- Alexandre Monteiro, Ph.D., May 1995, "Precipitation of alumina precursor powders using urea"
- Kandipati Sreenivasarao, Ph.D., December 1995, "Removal of toxic metals from dilute synthetic solutions by ion- and precipitate-flotation"
- Saskia Duyvesteyn, Ph.D., December 1997, "Adsorption of surfactants by a chelating resin: effects on floatability and metal loading"
- Yuchun Wang, Ph.D., September 1998, "Surface modification of polymeric membranes and silicon filters"
- Michelle Mathesen, M.S., May 1999, "In-situ prevention of acid mine drainage by pyrite encapsulation"
- Steven Kim, M.S., December 1999, "Investigation of gypsum and/or iron oxide coating on pyrite as a mechanism for in-situ prevention of acid mine drainage"
- Brad Bessinger, Ph.D., May 2000, "The geochemistry of gold, arsenic, and antimony in the Carlin-Type gold deposits and the mechanics of geologic fractures" (N.G.W. Cook posthumous co-chair)
- Claudia Villa Diniz, Ph.D., March 2000, "Remoção de metais pesados de solução de cloro de manganês através de resina de troca iônica" (Virginia S.T. Ciminelli, co-chair)
- Joe D. Edington, M.S., May 2001, "Impact of comminution method on digestion behavior of bauxite"
- Autumn Fjeld, M.S., May 2001, "Stabilization of supported liquid membranes"
- Zhendong Liu, Ph.D., May 2001, "Removal of metal ions from dilute solutions by ion flotation"
- Nishi Nijhawan, M.S., Spring 2002, "The effect of salinity on the rate of pyrite oxidation" (Education Abroad exchange student from Imperial College of Science, Technology and Medicine, University of London)
- Serdar Aksu, Ph.D., Dec. 2002, "The Role of Complexing Agents in the Chemical Mechanical Planarization of Copper"
- William Ewing, M.S., May 2003, "Use of chelating ion exchange resins to remove copper from semiconductor processing waste solutions and recycle process water"

- Jennifer Haigh, M.S., Spring 2004, "Copper uptake on, and elution from, ion exchange resins". (Education Abroad exchange student from Imperial College of Science, Technology and Medicine, University of London)
- Jeffrey Winterton, M.S., Dec. 2004, "Uptake and elution of copper on chelating ion exchange resins"
- Ling Wang, Ph.D., Dec. 2006, "Investigation of the Chemical and Electrochemical Phenomena in the Chemical Mechanical Planarization of Copper"
- Daniel Chapman, M.S., December 2006, "Synthesis of biocompatible films using polyelectrolyte multilayers"
- Christopher Lubeck, Ph.D., May 2007, "Synthesis and Characterization of Inorganic Materials Precipitated into Polymeric and Novel Liquid Crystalline Systems"
- Jeffrey Winterton, Ph.D., May 2008, "Development of a novel microfluidic reactor for highly controlled synthesis of semiconductor nanocrystals"
- Shantanu Tripathi, Ph.D., Dec 2008, "Tribo-chemical modeling of chemical mechanical planarization (CMP) of copper" (co-supervised with David Dornfeld, Mechanical Engineering).
- Anh Pham Le Tuan, M.S./PhD, "Electrochemical studies on the generation of oxidizing species on the surface of zero-valent iron" (co-supervised with David Sedlak, Civil and Environmental Engineering)
- Seungchoun Choi, M.S./Ph.D. "Modeling the coupled mechanical and chemical contributions to Chemical Mechanical Planarization" (co-supervised with David Dornfeld, Mechanical Engineering).
- Alyssa Maich, M.S./Ph.D., "Synthesis of nanonecklaces in microfluidic devices".
- Hongxu Liu, M.S./Ph.D., "Nanostructured anisotropic dielectric composites for energy storage"
- Allison Engstrom, M.S/Ph.D, "Nanostructured electrochemical capacitors"

Undergraduates:

- Edward Kim, 1986-87, "Precipitation of zirconia by hydrolytic stripping"
- Lucia Feng, 1986-87, "Hydrolysis of iron during pressure leaching of zinc sulfide concentrates"
- Zeva Fong, 1986, "Hydrolysis of iron at elevated temperatures"
- Stephen Kim, 1996, "Detoxification of aqueous solutions using ion exchange resins"
- John Newberg, 1997-1998, Senior thesis in Environmental Sciences and Chemistry, "Ion flotation: predicting metal removal rates from surface tensions measurements"
- Abbas Hassan, 1997-1998, "Novel equipment for ion flotation"
- Sriram Kosuri, 1997-1998 "Bioremediation of metal-laden acid mine drainage"
- Andrea Renner, 1997-1998 "Bioremediation of metal-laden acid mine drainage"
- Michael Chin, 2002, "Functionalization of polymers to create inorganic/polymer hybrid materials"
- Goretti W. Ngao, 2003, "Ion exchange of copper with Dowex M-4195"
- Fanny Darmawan, 2003-2004, "Regeneration of copper-loaded Dowex M-4195" and "Synthesis of conducting hexagonal phase liquid crystals"
- Michael Ho, 2005, "NMR and TEM characterization of liquid crystal systems"
- Christopher Lai, 2005, "Galvanic effects in chemical mechanical planarization"
- Danny Wu, 2006-07, "Electrochemical studies and AFM of copper CMP"
- Seo (Jake) Park, 2006-07, "Development of a microfluidic reactor for synthesizing nanoparticles".
- Gye Hyun (Alan) Kim, 2008-09, "Synthesis of magnetic particles by hydrolytic stripping".
- Carolyn T. Kwok, 2008-09, "Synthesis of magnetic particles by hydrolytic stripping".
- Matthew Samuels, 2008-09, "Synthesis of magnetic particles by hydrolytic stripping".

Postdoctoral Scholars:

Xiangzhi Liu, 1988-89, "Environmental effects of mining activities"

Yasuhiro Konishi, 1988-89, "Modeling of kinetics of hydrolysis and precipitation from organic solutions"

Jae-Chun Lee, 1990, "Precipitation of yttrium and lanthanum oxalates from di-2-ethylhexyl phosphoric acid"

Enriqueta Antico, 1992, "Modeling the solvent extraction of yttrium from chloride and nitrate solutions with di-2-ethyl hexyl phosphoric acid"

Mauricio Torem, 1995 "Flotation and extractive metallurgy of xenotime and zirconite concentrates"

Kazuya Koyama, 2006-07 "Synthesis of nanoparticulate CdSe"

Feng Xie, 2010-11 "Anodic oxidation of cyanide and thiocyanate during the electrolytic treatment of waste copper cyanide solutions"

COURSES TAUGHT

Engineering 44/48/49: Energy and Non-renewable Resources (1985- 1989) (with N.G.W. Cook)

Mineral Engineering 260: Surface Properties of Materials (1993-2000)

Mineral Engineering 262: Surface Chemistry of Flotation (1992-1994)

Mineral Engineering 263: Applied Surface Phenomena (1995-1999)

Mineral Engineering 270: Advanced Hydrometallurgy (1984-1999)

Mineral Engineering 271: Electrochemistry in Minerals and Materials Processing (1986-1996)

Mineral Engineering 150: Mineral Engineering Laboratory (1984-1992)

Mineral Engineering 160: Introduction to Mineral Processing (1983-1985)

Mineral Engineering 190: Field trips (1987 & 1989)

Materials Science and Engineering 112: Corrosion (Chemical Properties), (1984-1985, 1996-2001)

Materials Science and Engineering 120: Materials Production (1986-1989; 2009-)

Materials Science and Eng. 161: Chemical Behavior of Minerals, Materials and Fluids (1995 and 1998)

Materials Science and Eng. 227: Solution Processing of Materials, Devices and Nanostructures (2001-)

Materials Science and Engineering 260: Surface Properties of Materials (2003-)

MSE 300: Supervised teaching of Materials Science and Engineering (2004-)

Nuclear Engineering 124: Nuclear Chemical Engineering (1995)

Engineering 92: Perspectives in Engineering (2008-)

PUBLICATIONS: JOURNALS, CONFERENCE PROCEEDINGS, ETC.

1. F.M. Doyle-Garner and A.J. Monhemius, "The hydrolytic stripping of Versatic acid solutions containing iron and other metals", *Minerals and Metallurgical Processing*, 2 (1985) pp. 47-51.
2. F.M. Doyle-Garner and A.J. Monhemius, "Mixed iron-nickel complexes in Versatic 10 solutions", *Hydrometallurgy*, 13 (1985) pp. 317-326.
3. F.M. Doyle-Garner and A.J. Monhemius, "Hydrolytic stripping of single and mixed metal-Versatic solutions", *Metallurgical Transactions B*, 16B, (1985) pp. 671-677.
4. E.A. Villegas and F.M. Doyle-Garner "Formation of bimetallic complexes in solvent extraction with carboxylic acids - studied by infrared spectrophotometry" *Anais do XI Encontro Nacional de Tratamento* in October 1985, Natal, Brazil, Vol. 2, pp. 312-326.
5. F.M. Doyle, "Solvent Extraction. Principles and Applications to Process Metallurgy, Part 1", (Book Review), *International Journal of Mineral Processing*, 16 (1986) pp.299-306.
6. H. Arauco and F.M. Doyle, "Hydrolysis and precipitation of iron during acid pressure leaching of zinc sulphide materials", in *Hydrometallurgical Reactor Design and Kinetics*, Eds. R.G. Bautista, R.J. Wesely, G.W. Warren, TMS-AIME, 1986, pp. 187-207.
7. N. Ranjan, F.M. Doyle and E. Peters, "Mathematical model for the leaching kinetics of zinc oxide in acid solutions", in *Hydrometallurgical Reactor Design and Kinetics*, Eds. R.G. Bautista, R.J. Wesely, G.W. Warren, TMS-AIME, 1986, pp. 49-65.
8. D. Pouillon, F.M. Doyle and E.A. Villegas, "Mixed-metal complexes formed during solvent extraction with carboxylic acids", *Proceedings ISEC '86, International Solvent Extraction Conference*, Munich, September, 1986, Vol. II, pp. 99-106.
9. H. Arauco and F.M. Doyle, "Hydrolysis and precipitation of iron during first stage pressure leaching of zinc sulphide concentrates", in *Iron Control in Hydrometallurgy*, (Proceedings of the International Symposium on Iron Control in Hydrometallurgy, Toronto, October 1986) Eds. J.E. Dutrizac and A.J. Monhemius, Ellis Horwood, Chichester, England, pp. 409-430, 1986.
10. F.M. Doyle and James S. Hanson, "Proceedings of the International Symposium on Electrochemistry in Mineral and Metal Processing", (Book Review), *International Journal of Mineral Processing*, 17 (1986) pp. 317-320.
11. F.M. Doyle, N. Ranjan and E. Peters, "Mathematical modeling of zinc oxide leaching in dilute solutions", *Transactions of the Institution of Mining and Metallurgy*, 96, (1987), pp. C69-78.
12. Fiona M. Doyle and Wumao Ye, "ZrO₂ powders from zirconium (IV) carboxylates", *Journal of Metals*, 39 (7) July 1987, pp. 34-37.
13. F.M. Doyle, "Hydrometallurgical Extraction and Reclamation", (Book Review), *AIChE Journal*, 33 (1987) p. 1580.

14. D. Pouillon and F.M. Doyle, "Software for computation of aqueous phase species distributions and solvent extraction with liquid cation exchangers", *Metallurgical Transactions B*, 18B, (1987) pp. 743-746.
15. D. Pouillon and F.M. Doyle, "Solvent extraction of metals with carboxylic acids - theoretical analysis of extraction behaviour", *Hydrometallurgy*, 19 (1988) pp. 269-288.
16. F.M. Doyle, D. Pouillon and E.A. Villegas, "Solvent extraction of metals with carboxylic acids - coextraction of base metals with Fe(III) and characterization of selected carboxylate complexes", *Hydrometallurgy*, 19 (1988) pp. 289-308.
17. F.M. Doyle, "The physical chemistry of the precipitation stripping process for removing iron (III) from carboxylate solutions with dilute sulphuric acid", *Hydrometallurgy*, 20 (1988) pp. 65-85.
18. F.M. Doyle, "Extraction Metallurgy 85", (Book Review), *International Journal of Mineral Processing*, 23 (1988), pp. 157-159.
19. F.M. Doyle, "Recent developments in hydrometallurgy", *Journal of Metals*, 40 (4) April 1988, pp. 32-38.
20. M. Hood, J.P. Dwyer, F.M. Doyle, T.N. Narasimhan, A.J. Horne et al., "Mining Waste Study Final Report", Prepared for *California State Legislature*, July 1, 1988.
21. Ernest Peters and Fiona M. Doyle, "Leaching and decomposition of sulfide minerals", in *Challenges in Mineral Processing*, Eds. K.V.S. Sastry, M.C. Fuerstenau, Society of Mining Engineers, Littleton, CO, 1989, pp. 509-526.
22. Jung Hoon Yoon and Fiona M. Doyle, "Precipitation of rare-earth powders from aqueous solutions and emulsions", in *Innovations in Materials Processing Using Aqueous, Colloid and Surface Chemistry*, Eds. F.M. Doyle, S. Raghavan, P. Somasundarun and G.W. Warren, TMS, Warrendale, PA 1989 pp.195-212.
23. F.M. Doyle, S. Raghavan, P. Somasundarun and G.W. Warren (Eds.) *Innovations in Materials Processing Using Aqueous, Colloid and Surface Chemistry*, TMS, Warrendale, PA 1989.
24. B.J. Scheiner, Fiona M. Doyle and S.K Kawatra (Eds.) *Biotechnology in Minerals and Metal Processing*, Society of Mining Engineers, Littleton, CO, 1989.
25. F.M. Doyle, H. Arauco, and L.M. Feng, "Iron removal during oxidative, acid pressure leaching of a zinc sulphide concentrate", *International Journal of Mineral Processing*, 25 (1989) pp. 241-260.
26. F.M. Doyle, "Aqueous processing of minerals and materials", *J.O.M.*, 41 (4) (1989) pp. 51-58.
27. F.M. Doyle, "Hydrometallurgical processing", *Mining Engineering*, 41 (5) (1989) pp. 346-347.
28. Fiona M. Doyle, "Crystallization and Precipitation: Proceedings of the International Symposium", (Book Review), *Canadian Journal of Chemical Engineering*, 67 (1989) pp. 698
29. Fiona M. Doyle, Abbas H. Mirza, Wumao Ye and Mariola Mianowska, "Effect of physical and chemical characteristics of ore pyrite on leaching kinetics", in *Bioleaching: From Molecular Biology to*

- Industrial Applications*, Eds. R. Badilla-Ohlbaum, T. Vargas and L. Herrera, Proceedings of the UNDP-UNIDO Project CHI/88/003 Workshop, October 19-20, 1989, Santiago, Chile, pp. 23-44
30. Fiona M. Doyle, "Precipitation of powders from carboxylate solutions prepared by solvent extraction", *Wissenschaftliche Berichte 4. Extraktionsseminar des Zentralinstituts für Festkörperphysik und Werkstofforschung*, Akademie der Wissenschaften der DDR, Holzhau, DDR, December 1989, pp 123-152.
 31. M. Hood, J.P. Dwyer and F.M. Doyle, "Environmental and public health issues related to the disposal of non-fuel mining wastes" *California Geology*, January 1990, pp. 14-20.
 32. Fiona M. Doyle, "The Determination and Use of Stability Constants", (Book Review), *J.O.M.*, 42 (1990) pp. 50-51.
 33. Yasuhiro Konishi and Fiona M. Doyle, "Kinetics of nucleation and growth during hydrolytic stripping", *EPD Congress '90*, Ed. D.R. Gaskell, TMS, Warrendale, PA (1990) 63-80.
 34. Jung Hoon Yoon and Fiona M. Doyle, "Preparation of lanthanide oxalate powders using carboxylate-based emulsions", *Light Metals 1990*, Ed. C.M. Bickert, TMS, Warrendale, PA (1990) pp. 991-997.
 35. F.M. Doyle, "The aqueous processing of minerals and materials", *J.O.M.*, 42 (4) (1990) pp. 52-59.
 36. F.M. Doyle and Abbas H. Mirza, "Understanding the mechanisms and kinetics of acid and heavy metals release from pyritic wastes", *Proceedings of the Western Regional Symposium on Mining and Mineral Processing Wastes*, Ed. F.M. Doyle, May-June, 1990, Berkeley, CA, Society for Mining, Metallurgy and Exploration, Inc., Littleton, CO, pp. 43-51.
 37. F.M. Doyle (Ed.), *Proceedings of the Western Regional Symposium on Mining and Mineral Processing Wastes*, May-June, 1990, Berkeley, CA, Society for Mining, Metallurgy and Exploration, Inc., Littleton, CO (287 pp.)
 38. A-M. Cook, L.R. Myer, N.G.W. Cook and F.M. Doyle, "The effects of tortuosity on flow through a natural fracture", *Rock Mechanics Contributions and Challenges*, Proceedings 31st U.S. Symposium on Rock Mechanics, Eds. Hustrulid and Johnson, Balkema (1990) pp. 371-378.
 39. F.M. Doyle, "Acid mine drainage from sulphide ore-bodies", in *Sulphide Deposits - Their Origin and Processing to Metals*, Eds. P.M.J. Gray, G.J. Bowyer, J.F. Castle, D.J. Vaughan and N.A. Warner, The Institution of Mining and Metallurgy, London, 1990, pp. 301-310.
 40. Fiona M. Doyle, "Aqueous processing of minerals, metals and materials", *J.O.M.*, 43 (4) (1991) pp. 43-51.
 41. M. Hood, J.P. Dwyer and F.M. Doyle, "Regulation of mining wastes in California", *Mining Transactions*, 290 (1991) pp. 1818-1823.
 42. Abbas H. Mirza, Miguel N. Herrera and Fiona M. Doyle, "Characterization of pyrite-bearing materials by chemical oxidation", *Emerging Process Technologies for a Cleaner Environment*, Eds. S. Chander, P.E. Richardson and H. El-Shall, Society for Mining, Metallurgy and Exploration, Inc., Littleton, CO, 1992, pp. 121-129.

43. Jae-chun Lee and Fiona M. Doyle, "Precipitation of yttrium oxalate from di-2-ethylhexyl phosphoric acid solution", *Rare Earths: Resources, Science, Technology and Applications*, Eds. R.G. Bautista and N. Jackson, TMS, Warrendale, PA, 1992, pp. 139-150.
44. Fiona M. Doyle, "Integrating solvent extraction with the processing of advanced ceramic materials", *Hydrometallurgy* 29 (1992), pp 527-545.
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- Fiona M. Doyle, "Experiences in emulsion precipitation of rare-earth powders", *Akademie der Wissenschaften der DDR*, Zentralinstitut für Festkörperphysik und Werkstofforschung, Dresden, DDR, December 15, 1989.
- Fiona M. Doyle, Abbas H. Mirza, Wumao Ye and Mariola Mianowska, "Effect of bacteria on the electrochemical behavior of pyrite", *TMS Annual Meeting*, February 1990, Anaheim, CA.
- Fiona M. Doyle, "The environmental impact of aqueous processing operations", *TMS Annual Meeting*, 1991, New Orleans, LA.
- Wumao Ye and Fiona M. Doyle, "Hydrolysis, condensation and agglomeration mechanisms in the precipitation of zirconia particles from carboxylate solutions", *TMS Annual Meeting*, 1991, New Orleans, LA.
- Fiona M. Doyle, "Predicting the formation of acid mine drainage from pyrite-bearing materials", *Hydrology/Hydrogeology Colloquium Series*, University of Nevada - Reno, April 1, 1992.
- Fiona M. Doyle, "Production of oxide ceramic materials during hydrometallurgical processing", *Distinguished Lecturer Series*, University of Toronto, November 4, 1992.
- Fiona M. Doyle, "Preparation of oxide ceramics by hydrometallurgical processing routes", 1993 Distinguished Lecture in Hydrometallurgy, February 9, 1993, University of British Columbia.
- Hong Choi and Fiona M. Doyle, "Precipitation stripping of yttrium oxalate from D2EHPA solutions in nitrate and chloride media", *TMS Annual Meeting*, 1993, Denver, CO.
- Alexandre Monteiro and Fiona M. Doyle, "Precipitation of alumina precursor powders using urea", *TMS Annual Meeting*, 1993, Denver, CO.
- K. Sreenivasarao, S. Duyvesteyn, F.M. Doyle and D.W. Fuerstenau, "The use of ion flotation for removing toxic metals from solution", *ACS Annual Meeting*, March-April 1993, Denver, CO.
- Ali S. Saleh and Fiona M. Doyle, "Precipitation stripping of zinc-loaded D2EHPA using CO₂ sparging", *TMS Annual Meeting*, 1995, Las Vegas, NV.
- Alexandre Monteiro and Fiona M. Doyle "Hydrolysis and Precipitation of Alumina Precursor Powders by Thermal decomposition of Urea", *TMS Annual Meeting*, 1995, Las Vegas, NV.
- Fiona M. Doyle, "Detoxification of metal-bearing waste solutions by ion flotation, resin-in-pulp/resin flotation, and sorption on oxidized coal", *Pontifícia Universidade Católica do Rio de Janeiro*, August 31, 1995.
- Fiona M. Doyle, "Synthesis of ceramic materials using cation-exchange solvent extractants", *Federal University of Rio de Janeiro (COPPE)*, September 1, 1995.

Fiona M. Doyle, "Preparation of fine powders and advanced materials by aqueous methods", National Institute for Resources and Environment, Agency of Industrial Science and Technology, MITI, Tsukuba, Japan, March 1996.

Fiona M. Doyle, "Use and modifications of hydrometallurgical separations processes for environmental protection", *Spring Meeting, Mining and Materials Institute of Japan*, March 29, 1996.

Fiona M. Doyle and Kandipati Sreenivasarao, "Recovery of Cu^{2+} and Cd^{2+} from dilute aqueous solutions by ion flotation and electrolysis", *TMS Annual Meeting*, 1997 Orlando, FL.

Fiona M. Doyle, Series of three hour lectures, CETEM/CNPq, Rio de Janeiro, Brazil, December 8-12, 1997:

- (1) Leaching
- (2) Acid mine drainage and its remediation
- (3) Ion removal from dilute aqueous solutions
- (4) Ion flotation
- (5) Production of advanced materials by hydrometallurgical processes.

Fiona M. Doyle. "Opportunities for Biotreatment in Alumina Processing", Alcoa Technology Center, Pittsburgh, PA, January 7, 1998.

Fiona M. Doyle, John T. Newberg, and Kandipati Sreenivasarao, "The influence of adsorption densities on the ion flotation of Cu^{2+} with alkyl sulfates", *TMS Annual Meeting*, 1998 San Antonio, TX.

Fiona M. Doyle, "Flowsheet possibilities for the Ce-Pr-Nd system", Baotou Research Institute of Rare Earths, Baotou, Inner Mongolia, People's Republic of China, June 1998.

Zhendong Liu and Fiona M. Doyle, "Modifying metal ion selectivity in the ion flotation process using a chelating agent", 219th American Chemical Society Meeting, San Francisco, CA, March 2000.

Fiona M. Doyle, "Ion flotation: practical implications of the thermodynamics and kinetics", Curtin University of Technology/CSIRO Minerals, Waterford, Western Australia, September 4, 2000.

Fiona M. Doyle, "Aqueous processing of materials – Where is our expertise taking us?", Keynote talk, aqueous processing sessions, *PMP 2000, Second International Conference on Processing Materials for Properties*, San Francisco, November 2000.

Serdar Aksu and Fiona M. Doyle, "The Role of EDTA and Glycine in the Chemical Mechanical Planarization (CMP) of Copper", *PMP 2000, Second International Conference on Processing Materials for Properties*, San Francisco, November 2000.

Fiona M. Doyle, "Academia – to be, or not to be?", TMS Student Leaders Career Forum, TMS Annual Meeting, New Orleans, LA, February 11, 2001.

Fiona M. Doyle and Serdar Aksu, "Copper CMP: Electrochemistry in slurries containing organic complexing agents", SFR Group Presentation, February 26, 2001, University of California, Berkeley.

Zhendong Liu and Fiona M. Doyle, "The effect of dodecyldiethylenetriamine and pH on selectivity during ion flotation of Cu^{2+} , Ni^{2+} , and Co^{2+} ", 75th American Chemical Society Colloid and Surface Science Symposium, Pittsburgh, PA, June 2001.

- Zhendong Liu and Fiona M. Doyle, "The effect of triethylenetetraamine on the ion flotation kinetics of Cu^{2+} and Ni^{2+} using dodecylsulfate", *75th American Chemical Society Colloid and Surface Science Symposium*, Pittsburgh, PA, June 2001.
- Fiona M. Doyle, "Teaching and learning environmental hydrometallurgy", presented at *TMS Annual Meeting*, February 2002, Seattle, WA.
- Fiona M. Doyle, "The potential of aqueous processing for environmental protection", *Korea Institute of Geology and Mineral Resources, Daejeon, Korea*, April 23, 2002.
- Fiona M. Doyle, "Ion Flotation", *Korea Institute of Geology and Mineral Resources, Daejeon, Korea*, April 24, 2002.
- Serdar Aksu and Fiona M. Doyle, "Electrochemistry of copper in the chemical mechanical planarization (CMP) slurries containing glycine and hydrogen peroxide", *Intel, Santa Clara, CA*, May 31, 2002.
- Ran Ding, William Ewing, Fiona M. Doyle and James W. Evans, "In-process recycling of copper from semiconductor processing solutions", *AIChE Annual Meeting*, Indianapolis, IN, November 3, 2002
- Fiona M. Doyle, "Chemical mechanical planarization (CMP) of copper using complexing agents and hydrogen peroxide", *Small Features Reproducibility Project, University of California, Berkeley*, November 18, 2002.
- Christopher Lubeck, Michael Chin, and Fiona M. Doyle, "Functionalization of a synthetic polymer to create inorganic/polymer hybrid materials", *SME Annual Meeting*, Cincinnati, OH, February 25, 2003.
- William Ewing and Fiona M. Doyle, "Probing the Copper-Selective Bis(pyridylmethyl) Amine Functional Group", *SME Annual Meeting*, Cincinnati, OH, February 26, 2003.
- Nishi Nijhawan and Fiona M. Doyle, "Effect of Salinity on Generation of Acid Rock Drainage at a Former Industrial Site", *SME Annual Meeting*, Cincinnati, OH, February 26, 2003.
- Ling Wang, Amnuaysak Chianpairot and Fiona M. Doyle, "Mechanisms of passivation of copper in CMP slurries containing peroxide and complexing agents", *Invited Paper, presented at MRS Spring Meeting*, San Francisco, CA, April 24, 2003.
- R. Ding, W. Ewing, J.W. Evans and F.M. Doyle, "An investigation of the electrodeposition of copper relevant to the removal of dissolved copper from semiconductor industry waste streams", the 203rd *Electrochemical Society Meeting*, Paris, France, May 2, 2003.
- Fiona M. Doyle, Ling Wang and Serdar Aksu, ""Insight into Mechanisms for Passivation of Copper in CMP Slurries Containing Peroxide and Glycine", *NSF-SRC Engineering Research Center for Environmentally Benign Semiconductor Manufacturing, University of Arizona*, May 22, 2003.
- William Ewing, James W. Evans and Fiona M. Doyle, "The effect of plating additives on the recovery of copper from dilute aqueous solutions using chelating resins", *Hydrometallurgy 2003, 5th International Symposium*, Vancouver, BC, Canada, August 2003.

- Fiona M. Doyle and Ling Wang, "Chemical and Electrochemical Characterization of Peroxide-Induced Passivation of Copper in Aqueous Glycine Solutions" Invited Paper, Twentieth International VLSI Multilevel Interconnection Conference), Marina Del Rey, California, September 2003
- Fiona M. Doyle, "Feature level compensation and control: chemical mechanical planarization", FLCC project seminar, University of California, Berkeley, November 3, 2003.
- Fiona M. Doyle, "Influence of pattern characteristics on copper CMP", Short course lecture at: Ninth International Conference on Chemical-Mechanical Polish (CMP) Planarization for ULSI Multilevel Interconnections, Marina Del Rey, California, February 23-26, 2004.
- Ling Wang and Fiona M. Doyle, "Known effects of pattern characteristics on copper CMP and future directions", Invited Paper, Ninth International Conference on Chemical-Mechanical Polish (CMP) Planarization for ULSI Multilevel Interconnections, Marina Del Rey, California, February 23-26, 2004, IMIC Headquarters, Tampa, FL.
- William Ewing, Fanny Darmawan, Fiona M. Doyle and James W. Evans, "Selection of Ion-Exchange Resins Suitable for Removing Copper from Aqueous Wastes Generated During Semiconductor Processing Operations", presented at TMS Annual Meeting, March 2004, Charlotte, NC.
- R. Ding, J. W. Evans and F.M. Doyle, "Electrodeposition as a means of processing semi-conductor industry waste streams containing copper", presented at TMS Annual Meeting, March 2004, Charlotte, NC.
- J. W. Evans, Ran Ding, Adam Neugebauer, F. M. Doyle and V. Jiricny, "Copper electrodeposition onto extended surface area electrodes and the treatment of copper-containing waste streams", *Metal Separation Technologies III – Prof. Holappa Honorary Symposium*, Copper Mountain, Colorado, June 20-24, 2004.
- Ling Wang, Fiona M. Doyle, Ran Ding, and James W. Evans, "Application of an Electrochemical Quartz Crystal Microbalance (EQCM) to Study the Interaction between Copper and Copper CMP Slurry Components", *9th CMP Users Group Annual Symposium*, San Jose, CA, October 13, 2004.
- Ling Wang and Fiona M. Doyle, "Galvanic interactions between copper and barrier materials during CMP", FLCC project seminar, University of California, Berkeley, October 25, 2004.
- Fiona M. Doyle, "Management of Contaminated Mining and Materials Processing Sites in California: Science, Policy and Common Sense", Alan T. Lawley Lecture Series, Department of Materials Science and Engineering, Drexel University, Philadelphia, November 16, 2004.
- R. Ding, J.W. Evans and F.M. Doyle, "Electrochemical copper removal from semiconductor industry waste streams", *TMS Annual Meeting*, February 15, 2005, San Francisco, CA.
- C.R. Lubeck, F. Darmawan, W.C. Ewing and F.M. Doyle, "Gel Stability in a Liquid Crystal System and Application to a Novel Templating Liquid Crystal", *TMS Annual Meeting*, February 16, 2005, San Francisco, CA.
- J. Winterton, F. Darmawan and F.M. Doyle, "Investigation of ion exchange resins for use in treatment of semiconductor processing waste streams", *TMS Annual Meeting*, February 16, 2005, San Francisco, CA.

- Ling Wang and Fiona M. Doyle, "Use of an Electrochemical Quartz Crystal Microbalance (EQCM) to Elucidate the Adsorption of Glycine and Hydrogen Peroxide on Copper Surfaces" (invited paper), presented at *Tenth International Conference on Chemical-Mechanical Polish (CMP) Planarization for ULSI Multilevel Interconnections*, Fremont, California, February 22-25, 2005.
- Fiona M. Doyle, "Electrochemical studies of copper CMP – what they will and won't tell us", Rohm & Haas Electronic Materials, Newark, DE, August 3, 2005.
- Fiona M. Doyle, "Advanced Aqueous Processing – Ancient History or Revolution", keynote paper, EUROMAT 2005, Prague, Czech Republic, September 7, 2005.
- Ling Wang and Fiona M. Doyle, "Chemistry and Electrochemistry of Copper CMP – Capturing their Influence at the Feature and Bulk Levels", FLCC project seminar, University of California, Berkeley, October 17, 2005.
- Ran Ding, Daniel Chapman, James W. Evans and Fiona M. Doyle, "Effect of additives on the electrolytic processing of dilute effluents containing copper", presented at *TMS Annual Meeting*, San Antonio, TX, March 2006.
- Christopher R. Lubeck, T. Yong-Jin Han, Alexander E. Gash and Fiona M. Doyle, "Investigation of nanostructured cadmium sulfide in the presence of copper and silver salts", presented at *TMS Annual Meeting*, San Antonio, TX, March 2006.
- Gretchen T. Lapidus and Fiona M. Doyle, "Reductive Leaching of Chalcopyrite by Aluminum", presented at the *Seventh International Symposium on Electrochemistry in Mineral and Metal Processing*, The Electrochemical Society, Denver CO, May 2006
- Ran Ding, Xueyuan Zhang, James W. Evans and Fiona M. Doyle, "EQCM Study of the Influence of Copper Ions on the Adsorption of Polyethylene Glycol and Bis(sodiumsulfopropyl) Disulfide at a Copper Cathode", presented at the *Seventh International Symposium on Electrochemistry in Mineral and Metal Processing*, The Electrochemical Society, Denver CO, May 2006
- Shantanu Tripathi, Ling Wang, Fiona Doyle, and David Dornfeld, "AFM and EQCM study of copper in CMP slurry constituents" *International Conference on Planarization/CMP Technology (2006 ICPT)*, October 12-13, 2006, Foster City, CA. (poster)
- Fiona M. Doyle, "Solution Processing of Advanced Materials – What Can Hydrometallurgy Offer?", *Extraction and Processing Distinguished Lecture*, presented at *TMS Annual Meeting*, Orlando, FL, February 2007.
- Jeffrey D. Winterton and Fiona M. Doyle, "Critical factors in the microfluidic production of semiconductor nanocrystals", presented at *TMS Annual Meeting*, Orlando, FL, February 2007.
- Fiona M. Doyle, "Towards a pluralistic model for STEM fields in the 21st century", Panel at *Changing the Culture of the Academy*, University of California, Berkeley, March 22, 2007.
- Shantanu Tripathi, Fiona Doyle and David Dornfeld, "Properties and Mechanical Response of Passive Films formed during Copper CMP", Presented at *MRS 2007 Spring Meeting*, San Francisco, CA, April 2007.

- Fiona Doyle and Shantanu Tripathi, "CMP Modeling Framework to Aid Design for Manufacturing", FLCC Seminar, September 24, 2007
- Shantanu Tripathi, Adrien Monvoisin, David Dornfeld, and Fiona M. Doyle, "CMP Modeling as a part of Design for Manufacturing", Invited Paper, *2007 International Conference on Planarization/CMP Technology (2007 ICPT)*, October 25, 2007, Dresden, Germany.
- Fiona M. Doyle, Jeffrey D Winterton, David R. Myers, Julian M. Lippmann, and Albert P. Pisano, "Development and Testing of a Novel Reactor Configuration for Improved Temperature Control in Microfluidic Reaction Systems", *NSF Engineering Research and Innovation Conference, Knoxville, Tennessee*, January 2008
- Fiona M. Doyle, "Oh, the places you'll go! – Reflections on 25 years as a female engineering professor", Army Corps of Engineers, San Francisco, March 19, 2008.
- Shantanu Tripathi and Fiona Doyle, "Electrochemical probing of films formed on copper during CMP," IMPACT Seminar, University of California, October 6, 2008
- Fiona M. Doyle, "Electrochemical studies of copper chemical mechanical planarization (CMP)," Departamento de Ingenieria de Procesos e Hidraulica, Universidad Autonoma Metropolitana-Iztapalapa, Mexico City, October 10, 2008.
- Fiona M. Doyle, "Ion flotation demystified – what the fundamentals showed us", Symposium honoring Douglas W. Fuerstenau, December 11, 2008, Emeryville, CA.
- Fiona M. Doyle and Zhendong Liu, "Control of selectivity in ion flotation using chelating agents", Somasundaran Symposium, SME Annual Meeting, Denver, CO, February 24, 2009.
- Anh L. Pham, Changha Lee, Fiona M. Doyle, and David L. Sedlak, "Development of heterogeneous catalyst capable of activating hydrogen peroxide at neutral pH values", 237th American Chemical Society National Meeting, Salt Lake City, UT, March 22, 2009, Paper Envr 25.
- Shantanu Tripathi, Seungchoun Choi, Fiona M. Doyle and David A. Dornfeld, "Integrated Tribo-Chemical Modeling of Copper CMP", MRS Spring Meeting, San Francisco, CA, April 14, 2009.
- Shantanu Tripathi, Fiona M. Doyle, and David A. Dornfeld, "Fundamental mechanisms of copper CMP – passivation of copper in CMP slurry constituents", MRS Spring Meeting, San Francisco, CA, April 15, 2009.
- Fiona M. Doyle, "The Role of Hydrometallurgy in a Sustainable Twenty First Century World". Invited, 4th International Conference on Recent Advances in Materials, Minerals and Environment, and 2nd Asian Symposium on Materials and Processing, Penang, Malaysia, June 2009.
- Fiona M. Doyle, Nicola M. Fung, Jeffrey D Winterton, Albert P. Pisano, "Testing of a Prototype Droplet-Based Microreactor for Continuous Synthesis of Monodispersed Nanocrystals", Research and Education in a Flat World, National Science Foundation (NSF) Civil, Mechanical and Manufacturing Innovation (CMMI) Engineering Research and Innovation Conference, Honolulu, HI, June 2009.

- Christopher R. Lubeck, Alexander E. Gash, and Fiona M. Doyle, "Dianiline-Ethylene Oxide Based Amphiphiles and their Use for Templating Nanoscaled Cadmium Sulphide Hybrid Materials", Euromat '09, Glasgow, Scotland, September 2009.
- Jeffrey D Winterton, Nicola Fung, Albert P. Pisano and Fiona M. Doyle, "Design of a Two-Phase Microfluidic Reactor for Continuous Synthesis of Nanoparticle", Highlight paper; Euromat '09, Glasgow, Scotland, September 2009
- David L. Sedlak, Anh Le-Tuan Pham, Changha Lee, Christina K. Remucal and Fiona M. Doyle, "Activation of Oxygen and Hydrogen Peroxide by Iron-Containing Nanoparticles", *Groundwater Resources Association of California Conference on Nanotechnology for Environmental Cleanup and Pollution Control*, November 3, 2009
- Jan B. Talbot, Fiona M. Doyle, David A. Dornfeld, "Particle-Scale Modeling of CMP", *Proceedings 2009 International Conference on Planarization/CMP Technology (2009 ICPT)*, Japan, November 2009.
- Anh L. Pham, Changha Lee, Fiona M. Doyle and David L. Sedlak, "Alumina-containing Iron Oxide catalysts at neutral pH values", presented at Superfund Research Program Annual Meeting, Columbia University, NY, November 3-4, 2009
- Fiona M. Doyle, "Jim Evans: A reflection on his impact", Opening paper of the *Jim Evans Honorary Symposium, TMS Annual Meeting*, Seattle, WA, February 2010.
- Fiona M. Doyle, Serdar Aksu, Ling Wang, Shantanu Tripathi, and Seungchoun Choi, "The application of electrochemical techniques to elucidate the mechanisms of copper chemical mechanical planarization (CMP)", *TMS Annual Meeting*, Seattle, WA, February 2010
- Seungchoun Choi and Fiona M. Doyle, "Testing of tribochemical model for copper CMP in acidic media containing benzotriazole (BTA)", *IMPACT Seminar*, University of California, February 24, 2010.
- Fiona M. Doyle, "Sustainable production and processing of materials", *Applied Science and Technology Colloquium*, University of California, Berkeley, March 17, 2010.
- Anh Le-Tuan Pham, Fiona M. Doyle and David L. Sedlak, "Activation of H₂O₂ at neutral pH values by iron- and alumina- containing SBA-15 mesoporous silica", *ACS Spring Meeting*, San Francisco, CA March 21, 2010.
- David L Sedlak, Christina Keenan Remucal, Anh L Pham, Fiona M Doyle, "Iron coordination and its role in the production of reactive oxidants from hydrogen peroxide", *ACS Spring Meeting*, San Francisco, CA March 24, 2010.
- Anh Le-Tuan Pham, David L. Sedlak, and Fiona M. Doyle, "Production of oxidizing intermediates during corrosion of iron; implications for remediation of contaminants from mineral and metal processing" *Electrochemistry in Mineral and Metal Processing VIII*, ECS Spring Meeting, Vancouver, April 2010
- E. Yegân Erdem, A. Maich, F. M. Doyle, A. P. Pisano, "Droplet-based Microfluidic Reactor to Synthesize Monodispersed Nanoparticles and Nanonecklaces", presented at *ASME-International Mechanical Engineering Congress and Exposition*, Vancouver, BC, November 12-18, 2010

PATENTS

Fiona M. Doyle, Mark G. Benz, Ding Shan Bao, Hao Xian Ku, and Ni De Zhen, "New processing route for direct production of mixed rare earth oxides", U.S. and Chinese Patents filed February 1999.

Gretchen T. Lapidus-Lavine and Fiona M. Doyle, "Process For Recovery Of Metal-Containing Values From Minerals And Ores", U.S. and Mexican Patents, Filed February 20, 2007.