

CURRICULUM VITAE

MICHAEL JOHN ZAWOROTKO

Date of Birth: 14 August, 1956, Tredegar, South Wales
Citizenship: United Kingdom and Canada (Dual Citizen)
Permanent resident of USA
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University of South Florida
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EDUCATION

1974 - 77 Imperial College, London, U.K.
B.Sc. (Hons), A.R.C.S.
1978 - 82 University of Alabama
Ph.D. (supervisor: J.L. Atwood)

EMPLOYMENT

1979 - 82 University of Alabama
Research Assistant (Biology Department)
1982 - 85 University of Victoria
Post-Doctoral Fellow (S.R. Stobart)
1985 - 89 Saint Mary's University
Assistant Professor
1989 - 95 Saint Mary's University
Associate Professor
1991-92 NRC Senior Research Associate (U.S.), USAF Academy
1994-97 Saint Mary's University
Chairperson, Department of Chemistry
1995-97 Saint Mary's University, Professor
1995-99 President, Diazans Limited
01/98-09/99 Dean of Arts and Science, University of Winnipeg
09/99-08/08 University of South Florida, Chair Dept. of Chemistry
08/08-present University of South Florida, Professor of Chemistry

RESEARCH AND SCHOLARLY ACTIVITIES

Honours and Awards:

NRC Senior Research Associate (U.S. Air Force Academy), 1992; President's Award for Research Excellence, Saint Mary's University, 1994; Honorary Member of the Academy of Science of Higher School of Ukraine, 1998; Visiting Professor, Universite Louis Pasteur, Strasbourg, 1999; Visiting Professor, Institute of Biology and Chemistry of Proteins, CNRS, Lyon, France, 2001; Conference Universitaire de Suisse Occidentale Lecturer, 2002 and 2005.

Membership in Professional Organizations:

1982 - present American Chemical Society

Research Grants Awarded:

- 1986 . "Organotransition Metal Sustained Liquid Clathrates."
NSERC Operating - \$16,320 - one year.
- . "Liquid Clathrates - Utilization as Alkylating Agents
NSERC Research Development - \$12,000/yr. - two years.
 - . "Metal Superoxide Complexes"
NSERC General - \$4,000 - one year
 - . "Homogeneous Catalysis using Liquid Clathrates"
Senate Research - \$1,500 and \$1,450 - one year.
 - . SEED Summer Employment Subsidy - ca. \$2,800
- 1987 . "Organotransition Metal Sustained Liquid Clathrates"
NSERC Operating - \$16,320 - one year.
- . "Determination of the Alkylating Capabilities of Anionic
Petroleum Research Fund (type B) - U.S. \$10,000/yr. - two
 - . "Room Temperature Ionic Liquids"
NSERC General - \$2,500 - one year.
 - . "Novel Applications of Liquid Clathrates"
Senate Research - \$1,756 - one year.
 - . SEED Summer Employment Subsidy - ca. \$1,500.
- 1988 . "Salt Sustained Liquid-Liquid Binary Phases"
NSERC Operating - \$10,000 - one year.
- . "Novel Approaches to Hydrocarbon Separation Problems"
Imperial Oil Ltd. (URG) - \$10,000 - one year.
 - . "Applications of Room Temperature Liquids"
NSERC General - \$4,000 - one year.
 - . "Applications of Ionic Liquids to Separation Problems"
Senate Research - \$1,600 - one year.
 - . SEED Summer Employment Subsidy - ca. \$2,000
- 1989 . "Aspects of Arene Chemistry"
NSERC Operating - \$25,844 per year for 3 years.
- . "Hydrocarbon Separation Properties of Molten Salts"
Imperial Oil Ltd. (URG) - \$8,000 - 1 year.
 - . "Novel Approaches to Lubricating Oil Processing"
NSERC University/Industry with Imperial Oil - \$50,000 per
- 1990 . An internal grant of \$116,000 was awarded for purchase of
- 1991 . "X-ray crystallographic work station"
NSERC Equipment - \$25,193.
- 1992 . "Arenes: Covalent and Non-covalent Bonding"
NSERC operating - \$26,810 per year for four years.
- . "Ionic Liquids"

- NSERC General - \$2,500
- 1993 . "Crystal Engineering of Diamondoid Networks with Zeolite-Like Physical Features"
NSERC University/Industry with ICST - \$60,000 - 1 year.
- 1994 . "Crystal Engineering of Microporous Polymeric Solids"
ICST and NSERC - \$89,000/year - 2 years.
- 1995 . "Novel Biologically Active Compounds"
Contract from Shaw Group Ltd. - \$100,000 - 1 year
- 1995 . "Crystal Engineering: The Design and Application of Functional Solids"
NATO ASI - US\$80,000 (co-chair with K. Seddon)
- 1996 . "Crystal Engineering of Functional Solids"
NSERC - \$40,740 per year - 4 years
- 1996 . "Low temperature device for single crystal X-ray diffractometer"
NSERC Equipment - \$33,730.
- 1996 . "Novel Biologically Active Compounds"
Contract from Shaw Group Ltd. and IRAP - \$150,000 - 1 year
- 1996 . "Guest Interactions in Crystal Engineered Host Frameworks"
NATO CRG - \$11,300 (with K. Seddon, R. Rogers)
- 1996 . "Environmental Applications of Organic Clays"
ESTAC and NSERC - \$38,300 - 1 year
- 1996 . "CCD diffractometer"
Internal Research Grant - \$240,000
- 1998 . "Novel Technology for Hog Manure Remediation – \$35,000 – 1 year
Manitoba Livestock Manure Management Initiative
- 1998 . "Environmental Applications of Organic Clays" – \$75,000 – 1 year
ESTAC/NSERC (with M. Lamoureux, Saint Mary's university)
- 2000 . "Biocomposite Materials by Design" – \$20,000 – 1 year – Florida High
Technology Corridor (with D. Merkler, University of South Florida)
2000. "Characterization of Polymorphs of Fluocinolone Acetonide" - \$20,000 – 1 year
Bausch & Lomb Pharmaceuticals, Ltd., Tampa.
- 2001 . "From Molecular Polygons to Discrete Faceted Polyhedra to Porous Frameworks" – \$445,219 – 04/15/01
thru 03/31/04 – National Science Foundation (Division of Materials 0101641).
2001. "Synthesis, X-ray Study and Inclusion Properties of the Crown Based Extended Networks" - \$35,000 –
01/01/02 thru 04/30/03 – US Civilian Research and Development Foundation (with Y. Simonov, Moldova,
20% of funds to M.Z.)
2001. "Intelligent Design of Pharmaceutical Solids" - \$40,000 – 06/01/02 thru 05/31/03 – Vahlteich Research Fund
(with N. Rodriguez, University of Michigan, 40% of funds to M.Z.).
2002. "Multi-Component Crystalline Pharmaceutical Phases" - \$35,000 – 01/01/03 thru 12/31/03– Transform
Pharmaceuticals
2003. "Integrated Interdisciplinary Nanoscience REU" – \$213,000 – 01/01/03-12/31/05 – National Science
Foundation (PI with co-PI's R. Walsh and P. Muisener and 7 faculty mentors).
2003. "Molecular Nanoscience Research at USF – NanomolUSF" - \$50,000 – 05/01/03-04/30/05 –
Interdisciplinary
Research Grant Program at USF (PI with co-PI's S. Hariharan and R. Schlaf)
2003. "Multi-Component Crystalline Pharmaceutical Phases" - \$320,000 – 08/26/03 thru 08/25/07– Transform
Pharmaceuticals
2003. "Novel Agricultural Chemical Formulations" - \$12,000 – 09/01/03 thru 08/31/04 – Florida High Tech
Corridor
2004. "Smart Porous Metal-Organic Frameworks (MOFs) for Hydrogen Recovery and Storage" -\$200,000 –
01/01/05-12/31/05 – NASA (M. Eddaoudi PI, co-PI with B. Space, J. Eckert, A. Raissi, N. Mohajeri)
- 2005 "Purchase of a High Resolution ESI-TOF Mass Spectrometer ", \$273,754 – 02/01/05-01/31/06 – NSF-CRIF
(PI and major user with six other chemistry faculty)

2006. “Smart Porous Metal-Organic Frameworks (MOFs) for Hydrogen Recovery and Storage” - \$125,000 – 01/01/06-12/31/06 – NASA (M. Eddaoudi PI, co-PI with B. Space, J. Eckert, A. Raissi, N. Mohajeri)
2006. “Design of pharmaceutical co-crystals”, \$53,300 – 02/01/06-08/31/07 – Transform Pharmaceuticals
2007. “Novel Porous Metal Organic Frameworks (MOF) for Hydrogen Storage”, \$882,000 – 08/15/07-08/14/10 – Department of Energy (M. Eddaoudi PI, co-PI with B. Space, J. Eckert, A. Raissi)
2008. “Functional Photocatalytic Materials for Threat Decontamination/Degradation” - \$2,400,000 – 07/10/08-07/09/12 – Department of Defense (R. Larsen PI, M. Zaworotko is co-PI with M. Eddaoudi, J. Harmon and P. Zhang)
2008. “Pharmaceutical Co-Crystals for Alzheimer’s Disease Therapy: Improving Clinical Properties Through Crystal Engineering” – \$59,786 – 07/01/08-06/30/09 - Byrd Alzheimer’s Institute (M. Zaworotko PI, T. Gauthier co-PI)
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INVITED SEMINARS

- 1987
 - . Mount Allison University
 - . CANMET, Ottawa
 - . Imperial Oil Limited, Sarnia
 - . University of Waterloo
 - . Dalhousie University
- 1988
 - . Acadia University
 - . University of South Alabama
 - . University of Alabama
- 1989
 - . Northern Illinois University
 - . Brown University
- 1990
 - . University of Saskatchewan
 - . Dalhousie University
- 1992
 - . Imperial Oil Limited, Sarnia
 - . CANMET, Ottawa
 - . University of Alabama
 - . University of Mississippi
 - . Wright Laboratory, Dayton, Ohio
 - . Memorial University of Newfoundland*
- 1993
 - . Dalhousie University*
 - . University of New Brunswick*
 - . Universite Moncton*
 - . University of Prince Edward Island*
 - . Mount Allison University*
 - . University of Guelph
 - . University of Groningen
 - . University of Alabama
- 1994
 - . Acadia University
 - . University of Northern British Columbia
 - . Exxon Research and Engineering, N.J.
- 1995
 - . ETH Zurich
 - . The Queen's University of Belfast
 - . The University of Birmingham
 - . The University of Western Ontario
 - . The University of Windsor
 - . Brown University
- 1996
 - . Brown University
 - . Northern Illinois University
 - . National Research Council, Ottawa
 - . Trinity College, Dublin, Ireland
- 1997
 - . The University of Waterloo
 - . CNRS, Lyon, France
 - . University of Siegen, Germany
 - . Saint Mary's University
- 1998
 - . The University of Winnipeg
 - . The University of Manitoba
 - . Sumi State University
 - . Institute of Physics of Ukraine
 - . Kyiv State University
 - . Trojan Technologies, London, Ontario
 - . Nortran Pharmaceuticals, Vancouver

- . Apotex, Winnipeg
- . The University of Missouri, Columbia
- . The University of Manitoba (Physics)
- 1999 . Seoul National University, Korea
- . POSTECH, Pohang, Korea
- . University of South Florida
- . Universite Louis Pasteur, Strasbourg, France
- . Eastman Chemical, US
- . Bell Labs
- . University of Windsor, Canada
- . Constellation Technologies, Florida
- 2000 . Memorial University of Newfoundland, Canada
- . Acadia University, Canada
- . Mount Allison University, Canada
- . Saint Mary's University, Canada
- . University of Miami
- . University of Florida
- . Clemson University
- . University of Alabama
- . University of Mississippi
- . University of South Carolina
- . University of Prince Edward Island, Canada
- . Saint Francis Xavier University, Canada
- 2001 . University of Michigan
- . Universite Claude Bernard, Lyon, France
- . University of Winnipeg, Canada
- 2002 . University of South Florida, College of Medicine
- . University of Iowa
- . University of North Carolina
- . Worcester Polytechnic Institute
- . Transform Pharmaceuticals
- . University of Durham, England
- . University of Geneva, Switzerland
- . University of Neuchatel, Switzerland
- . University of Fribourg, Switzerland
- . University of Bern, Switzerland
- . University of Winnipeg, Canada
- . University of Brandon, Canada
- 2003 . World Precision Instruments, Sarasota
- . University of South Florida, Complex Systems Seminar Series
- . University of Manitoba
- . University of Prince Edward Island
- . Mount Allison University
- . Saint Mary's University
- 2004 . Georgetown University
- . Institute for Chemical and Engineering Sciences, Singapore
- . Pfizer Global Research, Groton, CT
- . Institut de Biologie et Chimie des Proteines, Lyon, France
- . Acadia University
- . St. Mary's University
- . Amgen, Thousand Oaks, California
- 2005 . Davidson College, NC
- . University of Houston

- . Amgen, Cambridge, Massachusetts
 - . Johnson & Johnson Pharma R&D, Raritan, NJ
 - . University of Notre Dame
 - . University of Basel
 - . University of Geneva
 - . University of Bern
 - . University of Lausanne
 - . University of Notre Dame
 - 2006
 - . University of Texas, San Antonio
 - . University of Cape Town
 - . University of Stellenbosch. S. Africa
 - . AstraZeneca, Macclesfield, UK
 - . Novartis, E. Hanover, New Jersey
 - 2007
 - . Florida International University
 - . Acadia University, Canada
 - . Saint Mary's University, Canada
 - . Sun Yat-Sen University, China
 - . National Taiwan University, Taipei, Taiwan
 - . Academia Sinica, Taiwan
 - . National Chung Cheng University, Taiwan
 - 2008
 - . National University of Morelos, Cuernvaca, Mexico
 - . Northwestern University
 - . Tulane University Medical School, Peptide Research Group
 - . Mutual Pharma, Philadelphia
 - . Cephalon, Frazer, PA
 - . College of New Jersey, Ewing, NJ
 - . Nanjing University, China
 - . Southeast University, China
 - 2009
 - . National Chemical Laboratory, Pune, India
 - . Dr. Reddy's, Hyderabad, India
 - . University of Hyderabad, India
 - . Texas A&M University
 - . University of Michigan
 - . University of West Florida
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SYNERGISTIC ACTIVITIES

- Industrial interaction since 1998. Funded research with the following companies: Bausch and Lomb Pharma; Constellation Tech.; Breed Technologies; Transform Pharma; United Agricultural Services.
- Consultant for several major pharmaceutical companies.
- Organizer of 12 symposia or conferences in U.S./Canada.
- 1999-present. Member of UTEK Corporation's Scientific Advisory Council, 2003-present Member of Transform Pharmaceutical's Scientific Advisory Board.
- Founding Editor of *Crystal Engineering*, published by Elsevier from 1997-2003; Editorial Board *J. Chemical Crystallography*, *Crystal Growth & Design*, *Polyhedron*; International Advisory Committee: VIII International Seminar on Inclusion Compounds 2002, Singapore Int. Chemistry Conference 2005.
- Associate Editor of *Crystal Growth & Design*, published by the ACS, July 2006-present.
- Papers reviewed for many journals including *Science*, *Nature*, *JACS*, *Angewandte Chemie* in 2005/2006.
- Invited participant in: *Challenges for the Chemical Sciences in the 21st Century* workshop organized by NRC, 2002; *Critical Building Blocks and Tools for Sustainability in the Chemical Industry: Identifying an Agenda for National Research* National Academy of Sciences, 2005.
- Served on panels for Canadian Foundation for Innovation and NSF/EPSCOR in 2003, MRSEC preproposal committee for NSF in 2004, Canadian Foundation for Innovation in 2006 and 2009, Canada Research Chairs Program (2008).
- Cover art for *Crystal Growth & Design* (2004), *Chemical Communications* (2001 and 2004), *Chemical Reviews* (2001).
- External Reviewer for the Following Theses: M.S. (Memorial University, 1990; University of Cape Town, 1996). Ph.D. (Saskatchewan, 1990; Alabama, 1993, Waterloo, 1997; Chinese University of Hong Kong, 1999; University of Windsor, 1999; University of Hyderabad, 2003, University of Pune, 2008).
- Served as external reviewer of the chemistry program at Lebanese American University (2009).

Zaworotko Group Members (July 2009): 8 Graduate students (J. Perry, M. Cheney, D. Weyna, J. Perman, T. Ong, H. Clarke, C. Geiser, P. Nugent) and two post-doctoral fellows (L. Wojtas, Jianjun Zhang).

ADMINISTRATIVE EXPERIENCE

09/94-12/97: Chair, Department of Chemistry, Saint Mary's University.

Highlights: academic leadership of Department at a time of faculty renewal and growth in majors and external funding.

01/98-09/99: Dean of Arts and Science, University of Winnipeg.

Highlights: administrative leadership for 90% of faculty and programs at University of Winnipeg, responsible for strategic resource allocation within College of Arts and Science.

09/99-08/08: Chair, Department of Chemistry, University of South Florida.

Highlights: Accountable officer for a Department in one of the 20 largest universities in the U.S. (currently >46,000 students). Department currently graduates ca. 300 majors per year, serves >100 graduate students and has 25 tenure track faculty and 16 permanent staff. Developed a 5-year plan that resulted in the hire of 11 new faculty since 1999. Departmental research grants now ca. \$5,000K/year (up from ca. \$400K/year in 1999). Responsible for fund raising and external relations.

EVIDENCE OF IMPACT

Evidence that our research has achieved impact is suggested by the quality of the journals in which we have published and the following, all of which have occurred since my move to USF in 1999:

- Invited lectures (including multiple plenary and keynote lectures) at 60+ regional, national or international meetings from 01/01 thru 07/09;
- Invited seminars at 35+ universities (US, Canada, UK, France, Switzerland, China, Taiwan) and 7 companies from 01/01 thru 07/09;
- Well over 10000 citations since 01/02.
- A 2001 review article was determined by ISI to be the #1 hot paper in Chemistry in July 2003, is the most cited paper with corresponding author from the State of Florida since 2000 and in October 2007 was recognized by ACS as a highly cited paper:
http://pubs.acs.org/journals/chreay/promo/most/highly_cited/2007/oct.html
- 2001 and 2005 hot papers in *Angewandte Chemie*, the highest impact primary literature chemistry journal;
- 5 publications with >500 citations, 34 publications with >100 citations;
- Featured in a *C&E News* articles on metal-organic materials (09/15/03), polymorphism in drugs (11/21/05) and pharmaceutical co-crystals (18/07/07);
- Featured twice as an Editor's Choice in *Science* (May 18th 2001, vol. 292, pg. 1293), *Science*, **317**, 1149, 2007;
- Featured in a *Nature Materials* News and Views article (October 2002, vol. 1, pgs. 91-92);
- Patent license worth 6 figures was granted in 2006
- Three of my recent (2006, 2007) USF graduate students are now employed by innovative pharma companies (Eli Lilly, Novartis, GSK)
- Two of my former honors students are now faculty members with NSF CAREER Awards (Dr. Len MacGillivray, Iowa; Dr. K. Travis Holman, Georgetown);
- Cover art for *Crystal Growth & Design* (2004), *Chemical Communications* (2001, 2004), *Chemical Reviews* (2001) (examples below);
- > \$6 million in external funding (either as PI or co-PI) since 2000;
- Associate editor of *Crystal Growth & Design*, the #1 crystallography journal in terms of impact factor;
- H-index of 55.



PUBLICATIONS

C = Communication; F = Full Paper; N = Note or Letter; P = Patent or patent application; R = Refereed Conference Proceedings.; I = Invited Review, Highlight or Book Chapter. Senior Author is underlined.

1. (C) Guzman, C.E.; Wilkinson, G.; Atwood, J.L.; Rogers, R.D.; Hunter, W.E.; Zaworotko, M.J. "Synthesis and Crystal Structures of Chloro(trimethylphosphine)tris(trimethylsilylmethyl) molybdenum(IV) and Di- μ -chloro-bis[bis(carbonyl)tri-methylphosphine(1-2- η -trimethylsilylmethyl-carbonyl)molybdenum (II)]." *J. Chem. Soc., Chem. Comm.*, 465, 1978.
2. (F) Shakir, R.; Zaworotko, M.J.; Atwood, J.L. "The Crystal and Molecular Structure of $K[Al_2(CH_3)_6SCN]$, a Compound which Contains an S,N-bridging Thiocyanate Ligand." *J. Organomet. Chem.*, 171, 9, 1979.
3. (F) Shakir, R.; Zaworotko, M.J.; Atwood, J.L. "Crystal and Molecular Structure of Cesium Isothiocyanatotrimethylaluminum." *J. Cryst. Mol. Struct.*, 9, 135, 1979.
4. (F) Zaworotko, M.J.; Atwood, J.L.; Floch, L. "Crystal and Molecular Structure of 5-amino-1,2,3,4-thiaziazole." *J. Cryst. Mol. Struct.*, 9, 2173, 1979.
5. (F) Zaworotko, M.J.; Atwood, J.L. "Crystal and Molecular Structure of $Cl_2AlN(C_2H_4N(CH_3)_2)$." *Inorg. Chem.*, 19, 268, 1980.
6. (C) Cetinkaya, B.; Hitchcock, P.B.; Lappert, M.F.; Torroni, S.; Atwood, J.L.; Hunter, W.E.; Zaworotko, M.J. "Transition-metal Complexes of Two Valence Tautomers of a Bulky Phenoxide, 2,6-Bu-t₂-4-MeC₆H₂O⁻ (ArO⁻); Preparation and Crystal and Molecular Structure of a Phenoxytitanium (III) and a Cyclohexadienonyl Rhodium(I) Complex, $[Ti(\eta^5C_5H_5O_2)OAr]$ and $[Rh(ArO^{\eta^5})(PPh_3)_2]$." *J. Organomet. Chem.*, 188, C31, 1980.
7. (F) Rausch, M.D.; Hart, W.P.; Atwood, J.L.; Zaworotko, M.J.; "The Formation and Molecular Structure of (η^5 -nitrocyclopentadienyl) dicarbonyl rhodium." *J. Organomet. Chem.*, 197, 225, 1980.
8. (F) Guzman, E.C.; Wilkinson, G.; Rogers, R.D.; Hunter, W.E.; Zaworotko, M.J.; Atwood, J.L. "Synthesis and Crystal Structures of Chloro (trimethylphosphine) tris(trimethylphosphine)(1-2-trimethyl-silylmethyl-carbonyl)molybdenum (II)." *J. Chem. Soc. Dalton Trans.*, 229, 1980.
9. (C) Lappert, M.F.; Slade, M.J.; Atwood, J.L.; Zaworotko, M.J. "Monomeric Coloured Germanium (II) and Tin (II) Di-t-butylamides, and the Crystal and Molecular Structure of $Ge(NCMe_2[CH_2]_3CMe_2)_2$." *J. Chem. Soc., Chem. Comm.*, 621, 1980.
10. (C) Cetinkaya, B; Gumrukcu, I; Lappert, M.F.; Atwood, J.L.; Rogers, R.D.; Zaworotko, M.J. "Bivalent Germanium, Tin and Lead 2,6-di-tert-butylphenoxides and the Crystal and Molecular Structures of $M(OC_6H_2Me-4-But_2-2,6)_2$ (M = Ge or Sn)." *J. Amer. Chem. Soc.*, 102, 2088, 1980.
11. (F) Stobart, S.R.; Dixon, K.D.; Eadie, D.T.; Atwood, J.L.; Zaworotko, M.J. "Transition Metal Complexes and Pyrazolyl Bridging Ligands between Very Different Metal Centers." *Angew. Chem. Int. Ed. Eng.*, 19, 931, 1980.
12. (C) Lappert, M.F.; Miles, S.J.; Atwood, J.L.; Zaworotko, M.J.; Carty, A.J. "Oxidative Addition of an Alcohol to the Alkylgermanium(II) Compound $Ge[CH(SiMe_3)_2]_2$; Molecular Structure of $Ge[CH(SiMe_3)_2]_2(H)OEt$." *J. Organomet. Chem.*, 212, 1981, C4.
13. (F) Lappert, M.F.; Riley, P.I.; Yarrow, P.I.W.; Atwood, J.L.; Hunter, W.E.; Zaworotko, M.J. "Metallocene Derivatives of Early Transition Metal Elements. Part 3. Synthesis, Characterization, Conformation and Rotational

Barriers ($Zr-C_{sp^3}$) of the Zirconium (IV) Chlorides $[Zr(\eta-C_5H_4R)_2CH(SiMe_3)_2Cl]$ and the Crystal and Molecular Structures of the t-butyl and Trimethylsilyl complexes ($R = Me_3C$ or Me_3Si). " *J. Chem. Soc. Dalton Trans.*, 314, 1981.

14. (C) Beveridge, K.A.; Bushnell, G.W.; Dixon, K.R.; Eadie, D.T.; Stobart, S.R.; Zaworotko, M.J.; Atwood, J.L. "Pyrazolyl-bridged Iridium Dimers. 1. Accommodation of Both Weak and Strong Metal-metal Interactions by a Bridging Pyrazolyl Framework in Dissymmetric Dimeric Structures." *J. Amer. Chem. Soc.*, 104, 920, 1982.

15. (C) Coleman, A.W.; Eadie, D.T.; Stobart, S.R., Atwood, J.L.; Zaworotko, M.J. "Pyrazolyl-bridged Iridium Dimers. 2. Contrasting Modes of Two Center Oxidative Addition to a Bimetallic System and Reductive Access to the Starting Complex: Three Key Diiridium Structures Representing Short Non-bonding and Long and Short Bonding Metal-metal Interactions." *J. Amer. Chem. Soc.*, 104, 922, 1982.

16. (F) Zaworotko, M.J.; Shakir, R.; Atwood, J.L.; Sriyonyongwat, V.; Reynolds, D.S.; Albright, T.A. "Synthesis and Structure of Dicarbonyl(η^5 -methylcyclopentadienyl)triphenylphosphine manganese(I)." *Acta Cryst.*, B38, 1572, 1982.

17. (F) Zaworotko, M.J.; Rogers, R.D.; Atwood, J.L. "Interaction of Trimethylaluminum and Trimethylgallium with the Acetate Anion. Synthesis and Crystal Structures of $[N(CH_3)_4][Al_2(CH_3)_6CH_3COO]$ and $Rb[Ga_2(CH_3)_6CH_3COO]$." *Organometallics*, 1, 1179, 1982.

18. (F) Eadie, D.T.; Dixon, K.R.; Stobart, S.R.; Zaworotko, M.J.; Atwood, J.L. "Crystal and Molecular Structures of Tetrafluoroborate Salts of the Cis-chlorobis-(triethylphosphine)(3-trifluoromethyl, 5-methyl-pyrazole) platinum(II) and cis-chlorobis-(triethylphosphine)(indazole) platinum(II) cations". *Inorg. Chem.*, 22, 774, 1983.

19. (C) Atwood, J.L.; Zaworotko, M.J. "The Formation and Structure of the Novel Aluminoxane Anion $[Me_2AlOAlMe_3]_2^{2-}$ ". *J. Chem. Soc., Chem. Comm.*, 302, 1983.

20 (C) Bushnell, G.W.; Fjeldsted, D.O.K; Stobart, S.R.; Zaworotko, M.J. "Two-Centre Oxidative Addition of Hexafluorobut-2-yne to a Bis(μ -pyrazolyl)-di-iridium(I) Complex Leading to Bridge Elimination via H-transfer from Coordinated COD: X-ray Crystal Structure of a Mixed-bridge Mixed-Valence Iridium Dimer Incorporating a (1-3,5,6 η -C₈H₁₁) Ligand." *J. Chem. Soc., Chem. Comm.*, 580, 1983.

21. (N) Atwood, J.L.; Berry, D.E.; Stobart, S.R.; Zaworotko, M.J. "Aspects of Organocadmium Chemistry. Part 3. Cyclometallated Alkyls and Aryls of Zn, Cd and Hg and the Crystal and Molecular Structure of Bis[o-N,N-dimethyl-amino-methyl]phenyl]-mercury(II)." *Inorg. Chem.*, 22, 3480, 1983.

22. (F) Beveridge, K.A.; Bushnell, G.W.; Stobart, S.R.; Atwood, J.L.; Zaworotko, M.J. "Pyrazolyl-bridged Iridium Dimers. 4. Crystal and Molecular Structures of Bis(cycloocta-1,5-diene) bis(μ -pyrazolyl) diiridium(I), its Dirhodium(I) Isomorph, and Two Bis(cycloocta-1,5-diene) Analogues Incorporating 3,5-disubstituted μ -pyrazolyl Ligands." *Organometallics*, 2, 1447, 1983.

23. (C) Auburn, M.J.; Holmes-Smith, R.D.; Stobart, S.R.; Zaworotko, M.J.; Cameron T.S.; Kumari, A. "The Phosphinomethylsilyl Group as a Bifunctional Bridging Ligand. X-ray Crystal Structure of Hexacarbonyl bis(μ -diphenylphosphino-methyl dimethylsilyl)diruthenium(II), and of its Reaction Product with Trifluoroacetic Acid, a Mononuclear Ruthenium(II) Complex Incorporating a Unique Co-ordinated Silanol." *J. Chem. Soc., Chem. Comm.*, 1523, 1983.

24. (C) Decker, M.J.; Fjeldsted, D.O.K.; Stobart, S.R.; Zaworotko, M.J. "Weak Intermetallic Bonding. A Rare Example of Molecular Stacking in a Neutral Square-planar Second-row Transition Metal Complex. X-ray Crystal Structures of $[Rh(cod)(C1)(dmpH)]$ and $[Rh(CO)_2(C1)(pzH)]$ (cod = cycloocta-1,5-diene; dmpH = 3,5-dimethylpyrazole; pzH = pyrazole)." *J. Chem. Soc., Chem. Comm.*, 1525, 1983.

25. (C) Bushnell, G.W.; Stobart, S.R.; Vefghi, R.; Zaworotko, M.J. "Addition of Diphenylphosphine to a Bis(μ -pyrazolyl)diiridium(I) Complex Resulting in H-transfer to a Co-ordinated Cycloocta-1,5-diene: X-ray Crystal Structure of an Iridium Dimer Incorporating Unsymmetrical Pyrazole and Phosphido Bridging Groups and 1-,4-5- η -C₈H₁₃ Ligand." *J. Chem. Soc. Chem. Comm.*, 282, 1984.
26. (C) Stobart, S.R. and Zaworotko, M.J. "Influence on Transition-metal Arene Complex Formation of Hydrogenation and Rearrangement of Polyaromatic Substrates Induced by Aluminum Trichloride. Octahydrophenanthrene Complexes from Tetralin: X-ray Crystal and Molecular Structure of η^5 -1,2,3,4,5,6,7,8,9-endo-nonahydro-9-exo-methylphenanthrenyl(tri-carbonyl) manganese." *J. Chem. Soc., Chem. Comm.*, 1700, 1984.
27. (F) Atwood, J.L.; Beveridge, K.A.; Bushnell, G.W.; Dixon, K.R.; Eadie, D.T.; Stobart, S.R.; Zaworotko, M.J. "Pyrazolyl-bridged Iridium Dimers. 6. Two-fragment, Two-center Oxidative Addition of Halogens and Methyl Iodides to trans-bis(triphenylphosphine)dicarbonyl bis(μ -pyrazolyl)diridium(I)." *Inorg. Chem.*, 23, 4050, 1984.
28. (C) Auburn, M.J.; Grundy, S.L.; Stobart, S.R.; Zaworotko, M.J. "Phosphinoalkylsilyl Complexes. 6. Isolation of a Silyl Complex of Iridium(I). Crystal and Molecular Structure of Dicarbonyl-(triphenylphosphine)[(diphenylphosphinoethyl)dimethylsilyl]iridium." *J. Amer. Chem. Soc.*, 107, 266, 1985.
29. (F) Zaworotko, M.J.; Kerr, C.R.; Atwood, J.L. "Reaction of the Phenoxide ion with Trimethylaluminum. Isolation and Crystal Structure of [K.dibenzo-18-crown-6][Al₂Me₆Oph] and K[AlMe₂(Oph)₂]." *Organometallics*, 4, 238, 1985.
30. (F) Bushnell, G.W.; Fjeldsted, D.O.K.; Stobart, S.R.; Zaworotko, M.J.; Knox, S.A.R.; MacPherson, K.A. "Pyrazolyl-bridged Iridium Dimers. 7. Synthesis and Properties of Bridge-substituted Analogues of [Ir(COD)(μ -pz)]₂, pzH = pyrazole, the 'Mixed Bridge' Complex [Ir₂(COD)₂(μ -pz)(μ fpz)], pfzH-3,5,-bis(trifluoro-methyl)pyrazole, and the 'Mixed Metal' Dimer [IrRh(COD)₂(μ pz)₂]. Crystal and Molecular Structures of Bis(cyclooctadiene)-bis(μ -3-phenyl-5-methylpyrazolyl) diiridium(I) (Disymmetric Isomer) and Bis(cycloocta-1,5-diene)bis-(μ -3,4,5-trimethylpyrazolyl) diiridium(I)". *Organometallics*, 4, 1107, 1985.
31. (F) Zaworotko, M.J.; Stamps, R.J.; Ledet, M.T.; Zhang, H; Atwood, J.L. "Heterocyclophane Complexes of Transition Metals. 1. Synthesis and Crystal Structure of Both (η^5 -[2,2](2,5)pyrrolloparacyclophane) tricarbonylchromium and ((η^5 [2,2](2,5)pyrrolloparacyclophane) tricarbonylchromium." *Organometallics*, 4, 1697, 1985.
32. (C) Fjeldsted, D.O.K.; Stobart, S.R.; Zaworotko, M.J. "Pyrazolyl-bridged Iridium Dimers. 10. Sequential Addition at the Metal Centers in a Diiridium Configuration. Oxidatively Induced Relocation of a Bent, Terminal Nitrosyl Group to Occupy a Bridging Site." *J. Amer. Chem. Soc.*, 107, 8258, 1985.
33. (C) Stobart, S.R.; Zaworotko, M.J. "Hydrogenation and Rearrangement of Coal Related Aromatic and Hydroaromatic Molecules Promoted under Mild Conditions by Aluminum Trichloride." *Fuel*, 64, 1623, 1985.
34. (F) Hood, R.D.; Vedel-MacRander, G.C; Zaworotko, M.J.; Tatum, F.M.; Meeks, R.G. "Distribution, Metabolism, and Fetal Uptake of Pentavalent Arsenic in Pregnant Mice Following Oral and Intraperitoneal Administration." *Teratology*, 35, 19, 1987.
35. (F) Holmes-Smith, R.D.; Stobart, S.R.; Vefghi, R.; Zaworotko, M.J.; Jochem, K.; Cameron, T.S. "Phosphinoalkylsilyl Complexes, Part 7." *J. Chem. Soc. Dalton Trans.*, 969, 1987.
36. (F) Hood, R.D., Vedel, G.C.; Zaworotko, M.J.; Tatum, F.M.; Meeks, R.G. "Uptake, Distribution and Metabolism of Trivalent Arsenic in the Pregnant Mouse." *J. Tox. Environ. Health*, 25, 419, 1988.
37. (C) Gaudet, M.V.; Peterson, D.C.; Zaworotko, M.J. "Ternary Hydrogen Halide/base/benzene Mixtures: A New Generation of Liquid Clathrates." *J. Incl. Phenom.*, 6, 425, 1988.

38. (C) Cameron, T.S.; Clerk, M.D.; Linden, A.; Sturge, K.C.; Zaworotko, M.J. "Interaction of Trialkylaluminum Reagents with Organotransition Metal π -complexes: One Step, High Yield Ethylation of [(arene)₂Fe]²⁺ cations." *Organometallics*, 7, 2571, 1988.
39. (F) Gaudet, M.V.; Hanson, A.W.; White, P.S.; Zaworotko, M.J. "Synthetic Applications of Trialkylaluminum Reagents: Alkylation and Reduction of Transition Metal Complexed π -hydrocarbon Ligands." *Organometallics*, 8, 286, 1989.
40. (F) Dubois, R.H.; Zaworotko, M.J.; White, P.S. "Conformational Variability in π -Complexes of Hexaethylbenzene. Crystal and Molecular Structure of [C₆Et₆](C₅H₅)Fe]BPh₄." *J. Organomet. Chem.*, 362, 155, 1989.
41. (N) Gaudet, M.V.; Zaworotko, M.J.; White, P.S. "X-ray Crystallographic Characterization of Hydrogen Bonding Interactions in Piperidinium Chloride and Piperidinium Tetrachloroaluminate: Relevance to the Structure of Room Temperature Melts." *Inorg. Chem.*, 28, 1191, 1989.
42. (F) Gaudet, M.V.; Zaworotko, M.J.; Cameron, T.S.; Linden, A. "Crystal and Molecular Structure and Unusual Hydrocarbon Solubility Properties of (C₅H₅)₂ZrCl(A1C1₄): Relevance to Ziegler-Natta Polymerization Chemistry." *J. Organomet. Chem.*, 367, 267, 1989.
43. (C) Dubois, R.H.; White, P.S.; Zaworotko, M.J. "Complex Hydrogen Bonded Cations. X-ray Crystal Structure of [(benzylammonium)₄C1][A1C1₄]₃ and its Relevance to the Structure of Basic Chloroaluminate Room Temperature Melts." *Inorg. Chem.*, 28, 2019, 1989.
44. (C) Clerk, M.D.; Sturge, K.C.; White, P.S.; Zaworotko, M.J. "Trimethylaluminum Mediated Chloromethylation of [(arene)₂Fe]²⁺ Cations." *J. Organomet. Chem.*, 368, C33, 1989.
45. (F) Zaworotko, M.J.; Cameron, T.S.; Linden, A.; Sturge, K.C. "Structures of the Tetrachloroaluminate Salts of the N-ethylpyridinium, 2-ethylpyridinium, Pyridinium and 1-chloromethyl 1,2,3,4,5,6-hexamethylbenzenonium Cations." *Acta Cryst.*, C45, 996, 1990.
46. (F) Zaworotko, M.J.; Sturge, K.C.; White, P.S. "Crystal and Molecular Structure of (η^5 -1,3,5-trimethyl-6-phenylcyclohexadienyl)(η^5 -cyclopentadienyl)iron, a Mixed Full Sandwich Iron(II) Complex." *J. Organomet. Chem.*, 389, 333, 1990.
47. (C) Sturge, K.C.; Zaworotko, M.J. "Pseudoferrocenes." *J. Chem. Soc., Chem. Comm.*, 1244, 1990.
48. (F) Clerk, M.D.; Zaworotko, M.J.; Borecka, B.; Cameron, T.S.; Hooper, D.L.; Linden, A. "Synthesis, Characterization and Dynamic Behaviour of Pseudoferrocene Complexes." *Canad. J. Chem.*, 68, 1923, 1990.
49. (F) Zaworotko, M.J.; Atwood, J.L.; Priester, R.D. "Structure, Conformation and Reactivity of Organotransition Metal Π -complexes. Part 2. X-ray Crystallographic Characterization of Two Neutral Half-Sandwich Cr(CO)₃ Complexes." *J. Coord. Chem.*, 22, 209, 1990.
50. (F) Martell, J.M.; Zaworotko, M.J., "Synthesis and Structure of Mixed Chloride-Tetrachloroaluminate Salts". *J. Chem. Soc., Dalton Trans.*, 1495, 1991.
51. (F) Zaworotko, M.J., Sturge, K.C.; Nunez, L.; Rogers, R.D. "Sterically Crowded Organometallics. Influence of Complexation upon the Conformation of Hexakis(phenylethyl)benzene". *Organometallics*, 10, 1806, 1991.

52. (F) Christie, S.; Dubois, R.H.; Rogers, R.D.; White, P.S.; Zaworotko, M.J. "Air Stable Liquid Clathrates: Solid State Structure of and Hydrocarbon Solubility of Organic Cation Triiodide Salts." *J. Incl. Phenom.* 11, 103, 1991.
53. (F) McAuley, A., Whitcombe, T.W.; Zaworotko, M.J. "Crystal and Solution Structure of Two Dinuclear Hexadentate Macrocyclic Complexes of Palladium". *Inorg. Chem.*, 30, 3513, 1991.
54. (C) Clerk, M.D.; Zaworotko, M.J., "High Nuclearity Manganese Carbonyl Complexes". *J. Chem. Soc., Chem. Comm.*, 1607, 1991.
55. (F) Atwood, J.L.; Christie, S.D.; Clerk, M.D.; Osmond, D.A.; Sturge, K.C.; Zaworotko, M.J. "Interaction of Alkylaluminum Reagents with Organotransition Metal Arene Complexes: Net Addition of Alkide, Haloalkide, and Dichloromethide to [(arene)₂Fe]²⁺ Cations". *Organometallics*, 11, 337, 1992.
56. (F) Hunter, A.D., Shilliday, L; Mozol, V.; Furey, W.S.; Zaworotko, M.J. "Systematic X-ray Crystallographic Study of the Structural Manifestations of π -donor and π -acceptor Substituent Effects in Substituted (η^6 -arene)Cr(CO)₃ Complexes". *Organometallics*, 11, 1550, 1992.
57. (F) Cameron, T.S., Linden, A.; Sturge, K.C; Zaworotko, M.J. "Crystal Structure of Bis(η^6 -mesitylene) iron (II) Hexafluorophosphate". *Helv. Chim. Acta* 75, 294, 1992.
58. (F) Vaughan, K.; Cameron, L.; Christie, S.; Zaworotko, M.J. "Structures of the Isomeric Triazene 1-oxides 3-(4-ethoxycarbonylphenyl)-1-methyl triazene 1-oxide (1) and 3-(2-ethoxycarbonylphenyl)-1-methyl triazene 1-oxide (2)". *Acta Crystallogr.*, C48, 1985, 1992.
59. (C) Clerk, M.D.; Copp, S.B.; Subramanian, S.; Zaworotko, M.J. "Supramolecular Properties of [Mn(CO)₃(μ_3 -OH)]₄, a Neutral Organometallic Molecule that is Capable of Binding a Variety of Small and Large Guest Molecules". *Supramolecular Chem.*, 1, 7, 1992.
60. (C) Wilkes, J.S.; Zaworotko, M.J. "Air and Water Stable 1-methyl-3-ethylimidazolium Based Ionic Liquids". *J. Chem. Soc., Chem. Comm.*, 965, 1992.
61. (N) Koch, L.; Ridge, D.S.; MacGillivray, L.; Zaworotko, M.J.; Piers, W.E. "C-S Bond Cleavage at an Electrophilic Zirconium Center: Synthesis, Structure and Thermal Decomposition of [Cp₂Zr(S-t-C₄H₉)(THF)][BPh₄]"'. *Organometallics*, 11, 3148, 1992.
62. (P) Boate, D.; Zaworotko, M.J. "Organic Non-quaternary Clathrate Salts for Petroleum Separation." U.S. Patent 5,220,106, 15 June 1993.
63. (C) McAuley, A.; Subramanian, S.; Zaworotko, M.J. "Coordination Polymerization of a Binuclear Copper(II) Macrocyclic Cation Through Self-Assembly." *J. Chem. Soc., Chem. Comm.*, 1321, 1992.
64. (C) Wilkes, J.S.; Zaworotko, M.J. "Manifestations of Noncovalent Interactions in the Solid State. Dimeric and Polymeric Self-Assembly in Imidazolium Salts via Face-to-Face Cation-Cation π -Stacking." *Supramolecular Chem.*, 1, 191, 1993.
65. (C) Copp, S.B.; Subramanian, S.; Zaworotko, M.J. "Supramolecular Chemistry of [Mn(CO)₃(μ_3 -OH)]₄: Assembly of a Cubic Hydrogen-Bonded Diamondoid Network with 1,2-diaminoethane." *J. Amer. Chem. Soc.*, 114, 8719, 1992.
66. (F) Subramanian, S.; Wang, L.; Zaworotko, M.J. "Sterically Crowded Organometallics. 2. Influence of Complexation and Intramolecular Bonding on Arboroles." *Organometallics*, 12, 310, 1993.

67. (F) Christie, S.D.; Clerk, M.D.; Zaworotko, M.J. "Trimethylamine-N-oxide Induced Disproportionation of $\text{Re}_2(\text{CO})_{10}$: Synthesis and X-ray Crystal Structure of $[\text{fac-Re}(\text{CO})_3(\text{ONMe}_3)][\text{ReO}_4]$." *J. Cryst. Spec. Research*, 23, 591, 1993.
68. (F) Subramanian, S.; Zaworotko, M.J. "Manifestations of Noncovalent Interactions in the Solid State. 3. Synthesis and X-ray Crystal Structures of $[\text{H}_4(\text{cyclam})][\text{FeCl}_5(\text{OH}_2)]\text{Cl}_2$ and $[\text{H}_4(\text{cyclam})][\text{CF}_3\text{COO}]_4$, Two Network Hydrogen Bonded Solids." *Canad. J. Chem.*, 71, 433, 1993.
69. (C) Copp, S.B.; Subramanian, S.; Zaworotko, M.J. "Formation of Interwoven 2-D Networks by the Spontaneous Strict Self-Assembly $[\text{M}(\text{CO})_3(\mu_3\text{-OH})]_4$ (M = Mn, Re) and Complementary Angular "Spacer" Molecules. *Angew. Chem., Int. Ed. Engl.*, 32, 706, 1993.
70. (C) Copp, S.B.; Subramanian, S.; Zaworotko, M.J. "Supramolecular Chemistry of $[\text{M}(\text{CO})_3(\mu_3\text{-OH})]_4$ (M = Mn, Re): Spontaneous Strict Self-Assembly of Distorted Super-Diamondoid Networks that are Capable of Enclathrating Acetonitrile." *J. Chem. Soc. Chem. Comm.*, 1078, 1993.
71. (C) Subramanian, S.; Zaworotko, M.J. "Self-Assembly of $[\text{H}_4(\text{cyclam})]\text{Cl}_4$ (cyclam = 1,4,8,11-tetraazacyclotetradecane) into a 3-D Polymeric Network with Microchannels that sustain a Symmetrical 1-D Polymer of Water Molecules." *J. Chem. Soc., Chem. Comm.*, 952, 1993.
72. (C) Fryzuk, M.D.; Mao, S.S.H.; Zaworotko, M.J.; MacGillivray, L.R. "The First Zirconium Alkylidene Complex Formed via σ -Hydrogen Abstraction: Synthesis and X-ray Crystal Structure of $[\eta^5\text{-C}_5\text{H}_3\text{-1,3-(SiMe}_2\text{CH}_2\text{PPr}^i_2)_2]\text{Zr}=\text{CHPh}(\text{Cl})$ ". *J. Amer. Chem. Soc.*, 115, 5336, 1993.
73. (N) Christie, S.; Subramanian, S.; Wang, L.; Zaworotko, M.J. "Ionic Liquid Mediated Synthesis and X-ray Crystal Structure of *trans*-Difluoro-tetrakis(1-methylimidazole)Iron(III) Tetrafluoroborate". *Inorg. Chem.*, 32, 5415, 1993.
74. (F) Boutilier, K.; MacGillivray, L.R.; Subramanian, S.; Zaworotko, M.J. "Ionic Liquid Mediated Preparation and X-ray Crystal Structure of $[\text{1-methylimidazolium}]_2[\text{cis-MoO}_2(\text{salicylato-O}^1, \text{O}^2)_2]$ ". *J. Cryst. Spec. Res.*, 23, 773, 1993.
75. (F) Subramanian, S.; Zaworotko, M.J. "X-ray Crystal Structure of *trans*-dichlorobis(2,4,6-collidine)copper(II)". *J. Cryst. Spec. Res.*, 23, 1019, 1993.
76. (C) Fryzuk, M.D.; Mylvaganam, M.; Zaworotko, M.J.; MacGillivray, L.R. "Synthesis of Mononuclear Paramagnetic Zirconium (III) Derivatives" *J. Amer. Chem. Soc.*, 115, 10360, 1993.
77. (C) Piers, W.E.; MacGillivray, L.R.; Zaworotko, M.J. "Reversible Interconversion of Permethylscandocene Tellurolates and Tellurides. X-ray Structure of $[(\text{C}_5\text{Me}_5)_2\text{Sc}]_2(\mu\text{-Te})$ ". *Organometallics*, 12, 4723, 1993.
78. (R) Zaworotko, M.; Subramanian, S.; MacGillivray, L.R. "Strategies for Crystal Engineering of Polar Solids". Materials Research Society Symposium Proceedings, Electrical, Optical and Magnetic Properties of Organic Solid State Materials, 328, 107, 1993.
79. (C) MacGillivray, L.R.; Subramanian, S.; Zaworotko, M.J. "Interwoven Two and Three Dimensional Coordination Polymers Through Self-Assembly of Cu(I) Cations with Linear Bidentate Ligands". *J. Chem. Soc., Chem. Commun.*, 1325, 1994.
80. (I) Subramanian, S.; Zaworotko, M.J. "Exploitation of the Hydrogen Bond: Recent Developments in the Context of Crystal Engineering". *Coord. Chem. Rev.*, 137, 357-401, 1994.
81. (I) Zaworotko, M.J. "Crystal Engineering of Diamondoid Networks". *Chem. Soc. Rev.*, 23, 283, 1994.

82. (F) Bridson, J.N.; Copp, S.B.; Schrivver, M.J.; Zhu, S.; Zaworotko, M.J. "The preparation of 1,2,3,5-dithiadiazolium chlorides from the reaction of nitrile sulphides with thiazyl chloride". *Can. J. Chem.*, 72, 1143, 1994.
83. (F) Piers, W.E.; Parks, D.J.; MacGillivray, L.R.; Zaworotko, M.J. "Mechanistic aspects of the thermal and photochemical interconversion of permethylscandocene tellurolates and tellurides. X-ray structures of $(C_5Me_5)_2ScTeCH_2C_6H_5$, $[C_5Me_5)_2Sc]_2(\mu-Te)$, and $[C_5Me_5)_2Sc]_2(\mu-Se)$ ". *Organometallics*, 13, 4547, 1994.
84. (N) Surette, J.K.D.; MacDonald, M.-A.; Zaworotko, M.J.; Singer, R.D. "X-ray crystal structure of 1,4-diphenylbutadiyne". *J. Chem. Crystallogr.*, 24, 715, 1994.
86. (N) Piorko, A.; Christie, S.; Zaworotko, M.J. "Structure of $(\eta^5\text{-cyclopentadienyl})(5a,6,7,8,9,9a\text{-}\eta^6\text{-}1,4\text{-benzodioxin}[2,3\text{-}b]\text{pyridine})\text{iron(II) hexafluorophosphate}$ ". *Acta Crystallogr.*, C50, 1544, 1994.
86. (N) Christie, S.; Piorko, A.; Zaworotko, M.J. "The Structure of $(\eta^5\text{-cyclopentadienyl})(1,2,3,4,4a,10a\text{-}\eta^6\text{-}2\text{-methylthianthrene})\text{iron(II) hexafluorophosphate}$ ". *Acta Crystallogr.*, C50, 1868, 1994.
87. (N) MacGillivray, L.R.; Zaworotko, M.J. "Crystal and molecular structure of 2,6-dihydroxybenzoic acid." *J. Chem. Crystallogr.*, 24, 703, 1994.
88. (C) Christie, S.D.; Subramanian, S.; Thompson, L.K.; Zaworotko, M.J. "Strict self-assembly of $[\text{Fe}(\text{cyclam})]^{3+}$ and hydrogen-bis-(1,1'-ferrocenedicarboxylate) $^{3-}$ into a novel mixed valent one-dimensional polymer that contains an $\text{Fe}^{\text{III}}\text{N}_4\text{O}_2$ chromophore." *J. Chem. Soc., Chem. Commun.*, 2563, 1994.
89. (F) Mu, Y.; Piers, W.E.; MacGillivray, L.R.; Zaworotko, M.J. "New ligand environments for soluble Ziegler-Natta olefin polymerization catalyst precursors. X-ray structures of $[(\eta^5\text{-}C_5Me_4Si(Me)_2OCH_2C_4H_7NH)ZrCl_3]$ and $[(\eta^5\text{-}C_5Me_4SiMe_3)_2Zr_2(CH_3)_2(\mu\text{-}\eta^2\text{-}C_5H_9NO)_2]$ ". *Polyhedron*, 14, 1, 1995.
90. (N) Piorko, A.; Christie, S.; Zaworotko, M.J. "Structure of the hexafluorophosphate salts of cyclopentadienyliron(II) complexes of dibenzodioxin and 1-methyldibenzodioxin". *Acta Crystallogr.*, C51, 26, 1995.
91. (N) Holman, T.K.; Zaworotko, M.J. "Crystal and molecular structure of $[\text{Mn}(\text{CO})_3(\mu_3\text{-OH})_4]$ ". *J. Chem. Crystallogr.*, 25, 93, 1995.
92. (F) Schrivver, M.J.; Zaworotko, M.J. "X-ray structure of 5-phenyl-1,3,4-oxathiazol-2-one". *J. Chem. Crystallogr.*, 25, 25, 1995.
93. (F) Fischer, J.; Piers, W.E.; MacGillivray, L.R.; Zaworotko, M.J. *Inorg. Chem.*, 34, 2499, 1995.
94. (F) Subramanian, S.; Zaworotko, M.J. "Manifestations of noncovalent bonding in the solid state. 6. $[\text{H}_4(\text{cyclam})]^{4+}$ (cyclam = 1,4,8,11-tetraazacyclotetradecane) as a template for crystal engineering of network hydrogen bonded solids". *Canad. J. Chem.*, 73, 414, 1995.
95. (F) Copp, S.B.; Holman, T.K.; Sangster, J.O.S.; Subramanian, S.; Zaworotko, M.J. "Supramolecular Chemistry of $[\text{M}(\text{CO})_3(\mu_3\text{-OH})_4]$ (M = Mn,Re): A Modular Approach to Crystal Engineering of Superdiamondoid Networks." *J. Chem. Soc., Dalton Transactions*, 2233, 1995.
96. (C) Spence, R.E. vH.; Piers, W.E.; MacGillivray, L.R.; Zaworotko, M.J. *Acta Cryst., Sect. C*, C51, 1688, 1995.
97. (C) Spence, R.E. vH.; Parks, D.J.; Piers, W.E.; MacDonald, M.; Zaworotko, M.J.; Rettig, S.J. "Competing Pathways in the Reactions of Bis-(pentafluorophenyl)borane with Dimethylzirconocene: α -Elimination vs Methyl-Hydride Exchange and an Example of Pentacoordinate Carbon." *Angew. Chem., Int. Ed. Engl.*, 34, 1230, 1995.
98. (C) Bullerwell, W.L.; MacGillivray, L.R.; Zaworotko, M.J.; Vaughan, K. Wilman, D.E.V. "1-(p-carbamoylphenyl)-3,3-dimethyltriazene, an Antitumour Agent." *Acta Cryst.*, C51, 2624-2627, 1995.

99. (F) Abd-El-Aziz, A.S.; de Denuis, C.R.; Zaworotko, M.J.; MacGillivray, L.R. "Controlled Design of Oligomeric Ethers with Pendant Cyclopentadienyliron Moieties" *J. Chem. Soc., Dalton Transactions*, 3375-3393, 1995.
100. (C) Subramanian, S.; Zaworotko, M.J. "Porous Solids by Design: $[\text{Zn}(4,4'\text{-dipyridyl})_2(\text{SiF}_6)]_\infty \cdot x \text{DMF}$, a Single Framework Octahedral Coordination Polymer with Large Square Channels" *Angew. Chem., Int. Ed. Engl.*, 34, 2127-29, 1995.
101. (F) Bostick, T.M.; Christie, S.D.; Connolly, T.J.; Copp, S.; Langler, R.F.; Reid, L.; Zaworotko, M.J. "A Novel Cyclopropanation." *Austral. J. Chem.*, 49, 243-247, 1996.
102. (F) Abourahma, H.; Copp, S.B.; MacDonald, M.-A.; Melendez, R.E.; Batchilder, S.D.; Zaworotko, M.J. "Network Hydrogen Bonding in Two New Cocrystals Sustained by $[\text{Mn}(\text{CO})_3(\text{OH})]_4$, a tetrahedral hydrogen bond donor." *J. Chem. Crystallogr.*, 25, 731-736, 1995.
103. (C) Robinson, F.; Zaworotko, M.J. "Triple Interpenetration in $[\text{Ag}(4,4'\text{bipyridine})][\text{NO}_3]$, a Cationic Polymer with a 3-D Motif Generated by Self-Assembly of "T-shape" Building Blocks." *J. Chem. Soc., Chem. Commun.*, 2413, 1995.
104. (C) Fischer, J.M.; Piers, W.E.; Pearce-Batchilder, S.D.; Zaworotko, M.J. "Titanium-Mediated Heterodehydrocoupling of Tributylstannane and Tellurium. X-ray Structure of $(\text{C}_5\text{Me}_5)_2\text{TiTeSn}(\text{C}_6\text{H}_5)_3$." *J. Amer. Chem. Soc.*, 118, 283-284, 1996.
105. (F) Jefford, V.J.; Schrivver, M.J.; Zaworotko, M.J. "The selective complexation of adamantane nitriles by tungsten pentacarbonyl" *Canad. J. Chem.*, 74, 107-113, 1996.
106. (F) Melendez, R.E.; Zaworotko, M.J. "Towards Crystal Engineering of Organic Porous Solids: Diammine Salts of Trimesic Acid." *Supramolecular Chem.*, 8, 157-168, 1997.
107. (F) Robinson, F.; Melendez, R.E.; Zaworotko, M.J. "The Origin of Polarity in Hydrogensulfate Salts." *Supramolecular Chem.* 7, 275-293, 1996.
108. (F) Losier, P., Zaworotko, M.J. "X-ray crystal structure of *trans*-dinitratotetrapyridinezinc(II) pyridine solvate, a clathrate compound." *J. Chem. Crystallogr.*, 26, 277-280, 1996.
109. (N) Losier, P., MacQuarrie, D., Zaworotko, M.J. "X-ray Crystal Structure of *trans*-dichlorobis(2,6-lutidine)palladium(II)." *J. Chem. Crystallogr.*, 26, 301-304, 1996.
110. (F) Mu, Y.; Piers, W.E.; MacQuarrie, D.C.; Zaworotko, M.J.; Young, V.G., Jr., *Organometallics*, 15, 2720, 1996.
111. (F) Fischer, J.M.; Piers, W.E.; Ziegler, T.; MacGillivray, L.R.; Zaworotko, M.J. *Chem. Eur. J.*, 2, 1221, 1996.
112. (F) Mu, U.; Piers, W.E.; MacQuarrie, D.C.; Zaworotko, M.J. *Canad. J. Chem.*, 74, 1696, 1996.
113. (C) Furey, W.S.; Sharma, C.V.K.; Zaworotko, M.J. "A Two Dimensional Clathrate: Tetraethylammonium Terephthalate•6H₂O." *Supramol. Chem.*, 8, 9-11, 1996.
114. (C) Melendez, R.E.; Sharma, C.V.K.; Zaworotko, M.J.; Bauer, C.; Rogers, R.D. "Toward Design of Organic Porous Solids: Modular Honeycomb Grids Sustained by Anions of Trimesic Acid." *Angew. Chem., Int. Ed. Engl.*, 35, 2213, 1996.
115. (C) Losier, P., Zaworotko, M.J. "A Non-interpenetrated Molecular Ladder with Hydrophobic Cavities" *Angew. Chem., Int. Ed. Engl.*, 35, 2779-2782, 1996.

116. (C) Sharma, C.V.K.; Zaworotko, M.J. "The X-ray Crystal Structure of Trimesic Acid ·1.5 (4,4'-Bipyridine): A Super Trimesic Acid Chicken-wire Grid". *Chem. Commun.*, 2655, 1996.
117. (C) Davies, C.; Langler, R.F.; Sharma, C.V.K.; Zaworotko, M.J. "A Supramolecular Carpet Formed via Self-Assembly of 4,4'-dihydroxyphenylsulfone" *Chem. Commun.*, 567-568, 1997.
118. (I) Zaworotko, M.J. "Cooperative Bonding Affords a Holesome Story". *Nature*, 386, 220-221, 1997.
119. (C) Hennigar, T.L.; Losier, P.; MacQuarrie, D.C.; Zaworotko, M.J.; Rogers, R.D.. "Supramolecular Isomerism in Coordination Polymers: Manifestations of Ligand Flexibility in $[\text{Co}(\text{NO}_3)_2(1,2\text{-bis}(4\text{-pyridyl)ethane})_{1.5}]_n$ ". *Angew. Chem., Int. Ed. Engl.*, 36, 972-973, 1997.
120. (F) Hansen, V.M.; Batchelor, R.J.; Einstein, F.W.B.; Male, J.L.; Pomeroy, R.K.; Zaworotko, M.J. Restricted Rotation about the Arene-Iron Bond in (arene)Fe(CO)(SiCl₃)₂ Complexes. *Organometallics*, accepted for publication, February 1997.
121. (C) Sharma, C.V.K.; Zaworotko, M.J.; Rogers, R.D. "Supramolecular Laminates" *Chem. Commun.*, 1559-1560, 1997.
122. (F) Blackwell, J.; Lehr, C.; Sun, Y.M.; Piers, W.E.; Pearce-Batchilder, S.D.; Zaworotko, M.J.; Young, V.G. "Synthesis and characterization of organometallic hydro-tris-pyrazolylborate derivatives of scandium via alkane elimination". *Can. J. Chem.*, 75, 702-711, 1997.
123. (F) Power, K.N.; Hennigar, T.L.; Zaworotko, M.J. "The Crystal Structure of the Coordination Polymer $[\text{Co}(4,4'\text{-bipyridine})_{1.5}(\text{NO}_3)_2] \cdot \text{CS}_2$, a New Motif for a Network Sustained by "T-shape" Building Blocks". *New J. Chemistry*, 177-181, 1998.
124. (R) Zaworotko, M.J. "From Molecules to Crystals", Modular Chemistry, NATO Advanced Research Workshop, J. Michl, editor., Kluwer Academic Publishers, Dordrecht, The Netherlands, 409-421, 1997.
125. (C) Power, K.N.; Hennigar, T.L.; Zaworotko, M.J. "The X-ray Crystal Structure of $\{\text{Cu}[1,2\text{-bis}(4\text{-pyridyl)ethane}]_2(\text{NO}_3)_2\}_n$: The First Example of a Coordination Polymer that Exhibits the NbO 3D Network Architecture". *Chem. Commun.*, 595-596, 1998.
126. (R) Zaworotko, M.J. "Coordination Polymers" in "Crystal Engineering: The Design and Application of Functional Solids" NATO-ASI Series (eds. M.J. Zaworotko and K.R. Seddon), 383-408, 1999.
127. (P) Subramanian, S.; Zaworotko, M.J. "Substituted Diazanthracene Compounds Having Pharmaceutical Utility", U.S. Patent No. 5,994,365, November 30, 1999.
128. (F) Ahern, T.P.; Hennigar, T.L.; MacDonald, J.A.; Morrison, H.G.; Langler, R.F.; Satyanarayana, S.; Zaworotko, M.J. "Synthesis and Chlorination of Chloromethyl Methylsulfonylmethyl Sulfide". *Austral. J. Chem.*, 50, 683-687, 1997.
129. (C) Biradha, K.; Zaworotko, M.J.; Nangia, A.; Desiraju, G.R. "2,6-dibenzoyl-1,4-benzoquinone". *Acta Cryst.*, C53, 1653-1655, 1997.
130. (C) Abd-El-Aziz, A.S.; de Denus, C.R.; Zaworotko, M.J.; Sharma, K. "Synthesis and structural characterization of cyclic aryl ethers". *Chem. Commun.*, 265-266, 1998.
131. (F) Hansen, V.M., Batchelor, R.J.; Einstein, F.W.B.; Male, J.L.; Pomeroy, R.K.; Zaworotko, M.J. "Restricted Rotation about the Arene-Iron Bond in (arene)Fe(CO)(SiCl₃)₂ Complexes", *Organometallics*, 16, 4875-4881, 1998.

132. (P) Zaworotko, M.J. "Supramolecular Laminates", U.S. Patent, filed March, 1998.
133. (C) Biradha, K.; Zaworotko, M.J. "A Supramolecular Analogue of Cyclohexane Sustained by Aromatic C-H... π Interactions: Complexes of 1,3,5-trihydroxybenzene with Substituted Pyridines". *J. Amer. Chem. Soc.*, 120, 6431-6432, 1998.
134. (F) Biradha, K.; Zaworotko, M.J. "Supramolecular Isomerism and Polymorphism in Dianion Salts of Pyromellitic Acid". *Crystal Engineering*, 1, 67-78, 1998.
135. (F) Biradha, K.; Sharma, C.V.K.; Dennis, D.; MacKinnon, V.; Zaworotko, M.J. "Supramolecular Synthesis of Laminates with Affinity for Aromatic Guests: A New Class of Clay Mimics". *J. Amer. Chem. Soc.*, 120, 11894-11903, 1998.
136. (I) Zaworotko, M.J. "From Disymmetric Molecules to Chiral Polymers: A New Twist for Supramolecular Synthesis". *Angew. Chem., Int. Ed. Engl.*, 37, 1211-1213, 1998.
137. (F) McAuley, A.; Subramanian, S.; Zaworotko, M.J.; Atencio, R. "A novel mixed macrocycle complex of nickel: Synthesis, structure and redox chemistry of $[\text{Ni}^{\text{II}}(\text{[9]aneN(3)})(\text{[9]aneS(3)})(\text{ClO}_4)_2\text{-CHCl}_3$ ($[\text{9]aneN(3)} = 1,4,7\text{-triazacyclononane}$ and $[\text{9]aneS(3)} = 1,4,7\text{-trithiacyclononane}$)". *Inorg. Chem.*, 37, 4607-4610, 1998.
138. (F) Parks, D.J.; Piers, W.E.; Parvez, M.; Atencio, R.; Zaworotko, M.J. "Synthesis and solution and solid-state structures of tris(pentafluorophenyl)borane adducts of PhC(O)X ($\text{X} = \text{H, Me, OEt, NPr}_2\text{-i}$)". *Organometallics*, 17, 1369-1377, 1998.
139. (F) Pottie, I.R.; Sharma, C.V.K.; Vaughan, K.; Zaworotko, M.J. "Crystal Structures of two 1,2-bis-(1-aryl-3-methyltriazene-3-yl)ethanes with aryl substituents of opposite polarity". *J. Chem. Cryst.*, 28, 5-10, 1998.
140. (F) Spence, R.E.V.; Piers, W.E.; Sun, Y.M.; Parvez, M.; MacGillivray, L.R.; Zaworotko, M.J. "Mechanistic aspects of the reactions of bis(pentafluorophenyl)borane with the dialkyl zirconocenes Cp_2ZrR_2 ($\text{R} = \text{CH}_3, \text{CH}_2\text{SiMe}_3, \text{and CH}_2\text{C}_6\text{H}_5$)". *Organometallics*, 17, 2459-2469, 1998.
141. (R) Biradha, K.; Dennis, D.; MacKinnon, V.A.; Seward, C.; Zaworotko, M.J. "Supramolecular Synthesis of Organic and Metal-Organic Laminates with Affinity for Aromatic Guests: Hydrophobic Clay Mimics", *Supramolecular Chemistry, NATO Advanced Research Workshop, G. Tsoucaris, editor., Kluwer Academic Publishers, Dordrecht, The Netherlands, 115-132, 1999.*
142. (F) Hansen, V.M.; Ma, A.K.; Biradha, K.; Pomeroy, R.K.; Zaworotko, M.J. "Conformational Isomerism in Triosmium Clusters: Structures of Yellow and Red $\text{Os}_3(\text{CO})_{11}[\text{P}(\text{p-C}_6\text{H}_4\text{F})_3]$ and $\text{Os}_3(\text{CO})_{11}(\text{PBut}_3)$ ". *Organometallics*, 17, 5267-5274, 1998.
143. (F) Jiang, F.; Male, J.L.; Biradha, K.; Leong, W.K.; Pomeroy, R.K.; Zaworotko, M.J. "Complexes Containing Unbridged Dative Metal-Metal Bonds and the Strong Acceptor $\text{Ru}(\text{CO})_3(\text{SiCl}_3)_2$ Moiety. Comments on the Transition Metal to Silicon Bond." *Organometallics*, 17, 5810-5819, 1998.
144. (C) Biradha, K.; Seward, C.; Zaworotko, M.J. "Helical Coordination Polymers with Large Chiral Cavities", *Angew. Chem., Int. Ed. Engl.*, 38, 492, 1999.
145. (F) Biradha, K.; Dennis, D.; Poirier, K.M.; Sharma, C.V.K.; Zaworotko, M.J. "Supramolecular Bilayers via Hydrogen bonding and Hydrophobic Interactions: Lipid Membrane Structural Mimics", *Transactions of the American Crystallographic Association (R.D. Rogers and M.J. Zaworotko, eds., 33, 85-96, 1998.*
146. (F) Biradha, K.; Singer, R.D.; Stark, A.; Vaughan, K.; Zaworotko, M.J. "Crystal Structures of a Series of 3,7-bis-(aryloxy)-1,3,5,7-tetraazabicyclo[3.3.1]nonanes", *J. Chem. Cryst.*, 28, 797-809, 1998.

147. (F) Atencio, R.; Biradha, K.; Hennigar, T.L.; Poirier, K.M.; Power, K.N.; Seward, C.M.; N.S.; Zaworotko, M.J. “Flexible Bilayer Architectures in the Coordination Polymers $[M^{II}(\text{NO}_3)_2(1,2\text{-bis}(4\text{-pyridyl})\text{ethane}_{1.5})_n]$ ($M_{II} = \text{Co}, \text{Ni}$), *Crystal Engineering*, 1, 203-212, 1998.
148. (R) Zaworotko, M.J. “Crystal Engineering of Coordination Polymers” in *Electrical and Optical Polymer Systems*, D. I. Wise, T.M. Cooper, J.D. Gresser, D.J. Trantolo, G.E. Wnek, eds., Marcel Dekker, New York, 1998, Chap. 25, pp. 871-901.
149. (F) Biradha, K.; Hansen, V.M.; Leong, W.K.; Pomeroy, R.K.; Zaworotko, M.J. “Steric and Electronic Influences in $\text{Os}_3(\text{CO})_{11}\text{PR}_3$ Structures”, *J. Clust. Science*, 11, 285-306, 2000.
150. (F) Jiang, F.; Biradha, K.; Leong, W.K.; Pomeroy, R.K.; Zaworotko, M.J. “Dicarbonylcyclopentadienyliridium, $(\eta\text{-C}_5\text{H}_5)\text{Ir}(\text{CO})_2$, as a ligand”, *Canad. J. Chem.*, 77, 1327-1335, 1999.
151. (F) Vogels, C.M.; Wellwood, T.L.; Hennigar, T.L.; Biradha, K.; Zaworotko, M.J.; Westcott, S.A. “Reactions of Aminoboron Compounds with Palladium and Platinum Complexes.” *Can. J. Chem.*, 77, 1196-1207, 1999.
152. (F) Lord, J.S.; Paddock, R.L.; Epstein, N.A.; Vogels, C.M.; Taylor, N.J.; Hennigar, T.L.; Zaworotko, M.J.; Broederick, T.; Driedzic, W.R., Westcott, S.A. “Synthesis, Structure, and Biological Relevance of Hydroxypyrene and Hydroxypyridinone Complexes of Molybdenum.” *Can. J. Chem.*, 77, 1249-1261, 1999.
153. (C) Gudbjartson, H.; Biradha, K.; Poirier, K.M.; Zaworotko, M.J. “A Novel Nanoporous Coordination Polymer Sustained by Self-Assembly of T-Shaped Moieties”, *J. Am. Chem. Soc.*, 121, 2599-2600, 1999.
154. (C) Biradha, K.; Domasevitch, K.; Moulton, B.; Seward, C.; Zaworotko, M.J. “Covalent and Noncovalent Interpenetrating Planar Networks in the Crystal Structure of $\{[\text{Ni}(4,4'\text{-bipyridine})_2(\text{NO}_3)_2]\cdot 2\text{Pyrene}\}_n$ ”, *Chem. Comm.*, 1327-1328, 1999.

Also featured in *Chemical & Engineering News*, July 26 1999, pp 10-11.

155. (F) Biradha, K.; Domasevitch, K.V.; Hogg, C.; Moulton, B.; Power, K.N.; Zaworotko, M.J. “Interpenetrating Covalent and Noncovalent Nets in the Crystal Structures of $\{[\text{M}(4,4'\text{-bipyridine})_2(\text{NO}_3)_2]\cdot 3\text{C}_{10}\text{H}_8\}$ ($\text{M}=\text{Co}, \text{Ni}$)”, *Cryst. Eng.*, 2, 37-45, 1999.
156. (I) Moulton, B.; Zaworotko, M.J. “Rational Design of Polar Solids”, Erice School on Crystallography/ NATO-ASI, Erice, Italy. D. Braga, A.G. Orpen, editors, Kluwer Academic Publishers, Dordrecht, The Netherlands, 1999, pp. 311-330.
157. (F) Domasevitch, K.V.; Enright, G.D.; Moulton, B.; Zaworotko, M.J. “A Neutral “Molecular Railroad” Coordination Polymer that Incorporates Polycyclic Aromatic Molecules: Synthesis and Single Crystal X-ray Structure of $[\text{Co}(4,4'\text{-bipyridine})_{2.5}(\text{NO}_3)_2]\cdot 2\text{Phenanthrene}$ ”, invited paper to special issue of *J. Solid State Chemistry*, 152, 280-285, 2000.
158. (F) Matthews, C.J.; Avery, K.; Xu, Z.; Thompson, L.K.; Zhao, L.; Miller, D.O.; Biradha, K.; Poirier, K.; Zaworotko, M.J.; Wilson, C.; Goeta, A.E.; Howard, J.A.K. “Tetranuclear Copper (II) and Nickel (II) Cluster Complexes Derived by Self-Assembly from a Series of Tetradentate Diazine Ligands: Structural and Magnetic Studies”, *Inorg. Chem.*, 38, 5266-5276, 1999.
159. (F) Fryzuk, M.D.; Duval, P.B.; Mao, SSSH; Rettig, S.J.; Zaworotko, M.J.; MacGillivray, L.R. “Reactivity Studies of the Zirconium Alkylidene Complexes $[\eta^5\text{-C}_5\text{H}_3\text{-SiMe}_2\text{CH}_2\text{PPr}_2)_2]\text{Zr}=\text{CHR}(\text{Cl})$ ($\text{R} = \text{Ph}, \text{SiMe}_3$)”, *J. Am. Chem. Soc.*, 121, 1707-1716, 1999.

160. (F) Fryzuk, M.D.; Duval, P.B.; Mao, SSSH; Zaworotko, M.J.; MacGillivray, L.R. "Mechanistic Studies on the Formation of Zirconium Alkylidene Complexes $[\eta^5\text{-C}_5\text{H}_3\text{-1,3-(SiMe}_2\text{CH}_2\text{PPr}_2)_2]\text{Zr=CHR(Cl)}$ (R = Ph, SiMe₃)", *J. Am. Chem. Soc.*, **121**, 2478-2487, 1999.
161. (F) Kiehlmann, E.; Biradha, K.; Domasevitch, K.V.; Zaworotko, M.J. "Crystal Structures of dihydroquercetin 3-acetate and dihydroquercetin 3,3',4',7-tetraacetate: hydrogen bonding in 5 hydroxyflavanones", *Canad. J. Chem.*, **77**, 1436-1443, 1999.
162. (F) Biradha, K.; Peori, M.B.; Vaughan, K.; Zaworotko, M.J. "Crystal structures of a series of 3,8-di[-2-aryl-1-azeryl]-1,3,6,8-tetraazabicyclo[4.4.1]undecanes", *J. Chem. Crystallogr.*, **29**, 145-156, 1999.
163. (F) Ostvath, O.; Sargeson, A.M.; McAuley, A.; Mendelez, R.E.; Subramanian, S.; Zaworotko, M.J.; Broge, L. "Cobalt cage complexes with N₃S₃ donor sets and differing cavity sizes: A novel macrobicyclic cage with a contracted cap", *Inorg. Chem.*, **38**, 3634-3643, 1999.
164. (I) Zaworotko, M.J. "Open season for solid frameworks", *Nature*, **402**, 242-243, 1999.
165. (C) Matthews, C.J.; Xu, Z.; Mandal, S.K.; Thompson, L.K.; Biradha, K.; Poirier, K.; Zaworotko, M.J. "A novel pentamanganese (II) cluster produced by a controlled self assembly process; an exact match between the coordination algorithm of the metals and the ligand binding site arrangement", *Chem. Commun.*, 347-348, 1999.
166. (F) McAuley, A.; Subramanian, S.; Zaworotko, M.J.; Biradha, K. "Stepwise complexation of Ni(II) and Cu(II) ions by 6,6'-C-spirobi(cyclam) (cyclam = 1,4,8,11-tetraazacyclotetradecane), L₁. Synthesis and redox chemistry of [M(H₂L₁)]X₄ (M = Cu²⁺, Ni²⁺), [Cu₂(L₁)]X₄, and [CuNi(L₁)]X₄ (X = ClO₄) and the x-ray crystal structure of [Cu₂(L₁)](ClO₄)₄." *Inorg. Chem.*, **38**, 5078-5085, 1999.
167. (F) Biradha, K.; Jenkins, H.; Peori, M.B.; Vaughan, K.; Zaworotko, M.J. "Crystal Structure of 1,3-di-2[(4-methoxyphenyl)-1-diazenyl]imidazoline." *J. Chem. Cryst.*, **29**, 1037-1041, 1999.
168. (F) Shaver, M.P.; Vogels, C.M.; Wallbank, A.I.; Hennigar, T.L.; Biradha, K.; Zaworotko, M.J. Westcott, S.A. "Trans alkenylpyridine and alkenylamine complexes of platinum." *Can. J. Chem.*, **78**, 568-576, 2000.
169. (F) Biradha, K.; Mondal, A.; Moulton, B.; Zaworotko, M.J. "Coexisting Covalent and Noncovalent Planar Networks in the Crystal Structures of {[M(bipy)₂(NO₃)₂]-arene}_n (M = Ni, 1; Co, 2; Arene = Chlorobenzene, Orthodichlorobenzene, Benzene, Nitrobenzene, Toluene and Anisole)." *Dalton Trans.*, 3837-3844, 2000.
170. (I) Moulton, B.; Zaworotko, M.J. "From Molecules to Crystals: Supramolecular Synthesis of Solids", *Advances in Supramolecular Chemistry*, vol. 7 (JAI Press, G. Gokel, ed.), 235-283, 2000.
171. (I) Zaworotko, M.J. "Nanoporous Structures by Design." *Angew. Chem., Int. Ed. Engl.*, **39**, 3052-3054, 2000.
172. (F) Jiang, F.; Jenkins, H.A.; Biradha, K.; Davis, H.B.; Pomeroy, R.K.; Zaworotko, M.J. "Compounds with Unbridged Dative Metal-Metal Bonds of Formula (R₃P)₂(OC)₃OsW(CO)₅ and Related Complexes." *Organometallics*, **19**, 5049-5062, 2000.
173. (I) Zaworotko, M.J. "Superstructural Diversity in Two Dimensions: Crystal Engineering of Laminated Solids", *Chem. Commun.*, 1-9, 2001.
174. (F) Bourne, S.A.; Mondal, A.; Zaworotko, M.J. "1-D Coordination Polymers Containing Benzenedicarboxylate", *Cryst. Eng.*, **4**, 25-36, 2001.
175. (C) Bourne, S.A.; Lu, J.; Mondal, A.; Moulton, B.; Zaworotko, M.J. "Self-Assembly of Nanometer-Scale Secondary Building Units into an Undulating Two-Dimensional Network with Two Types of Hydrophobic Cavity", *Angew. Chem., Int. Ed. Engl.*, **40**, 2111-2113, 2001.

176. (I) Moulton, B.; Zaworotko, M.J. "From Molecules to Crystal Engineering: Supramolecular Isomerism and Polymorphism in Network Solids", *Chemical Reviews*, 101, 1629-1658, 2001.

Featured by Institute for Scientific Information as the #1 hot paper in Chemistry, July 2003 -
<http://www.in-cites.com/analysis/03-second-che.html#Scientists>

177. (C) Moulton, B.; Lu, J.; Mondal, A.; Zaworotko, M.J. "Polygons and Polyhedra and Nanoporous Networks." *Angew. Chem, Int. Ed. Engl.* 40, 2113-2116, 2001.

Also featured in *Angew. Chemie* as a "hot paper",
http://www.wiley-vch.de/vch/journals/2002/2002_hot.html

178. (C) Bourne, S.A.; Lu, J.; Moulton, B.; Zaworotko, M.J. "Coexisting covalent and noncovalent nets: parallel interpenetration of a puckered rectangular coordination polymer and aromatic noncovalent nets." *Chem. Commun.*, 861-862, 2001.

179. (F) Pottie, I.R.; Vaughan, K.; Zaworotko, M.J. "A molecular recognition event in the reaction of a diazonium salt with N,N-dimethylethylenediamine." *J. Chem. Cryst.*, 143, 2001.

180. (C) Moulton, B.; Lu, J.; Mondal, A. Zaworotko, M.J. "Nanoballs: nanoscale faceted polyhedra with large windows and cavities", *Chem. Commun.*, 863-864, 2001.

Also featured in *Science*, May 18th 2001, vol. 292, pg. 1293 as an Editor's Choice and by *The Alchemist*

181. (F) Moulton, B.; Rather, E.; Zaworotko, M.J. "Interpenetration of covalent and noncovalent networks in the crystal structures of $\{[M(4,4'\text{-bipyridine})_2(\text{NO}_3)_2]\cdot 2\text{p-nitroaniline}\}_n$ where M = Co, **1**, Ni, **2**, Zn, **3**", *Crystal Engineering*, 4, 309-317, 2001.

182. (C) Abourahma, H.; Coleman, A.W.; Moulton, B.; Rather, B.; Shahgaldian, P.; Zaworotko, M.J. "Hydroxylated nanoballs: synthesis, crystal structure, solubility and crystallization on surfaces", *Chem. Commun.*, 2380-2381, 2001.

183. (C) Moulton, B.; Lu, J.; Zaworotko, M.J. "Periodic tiling of pentagons: the first example of a two-dimensional (5_3^3) -net", *J. Amer. Chem. Soc.*, 123, 9224-9225, 2001.

184. (C) Yoon, C. H.; Zaworotko, M.J.; Moulton, B.; Jung, K.W., "Regio- and Stereocontrol Elements in Rh(II)-Catalyzed Intramolecular C-H Insertion of α -Diazo- α -(phenylsulfonyl)acetamides", *Organic Letters*, 3, 3539-3542, 2001.

185. (C) Rather, B.; Moulton, B.; Bailey Walsh, R.D.; Zaworotko, M.J., "A new supramolecular isomer of $[\text{Zn}(\text{nicotinate})_2]_n$: a novel $4^2.8^4$ network that is the result of self-assembly of 4-connected nodes", *Chem. Commun.*, 694-695, 2002.

186. (C) Da Silva, E.; Memmi, L.; Coleman, A.W.; Rather, B.; Zaworotko, M.J., "Synthesis and solid-state structures of mono-functionalised *para*-H-calix-[6]-arenes", *J. Supramol. Chem.*, in press.

187. (C) Moulton, B.; Lu, J.; Hajndl, R.; Hariharan, S.; Zaworotko, M.J., "Crystal engineering of a nanoscale kagomé lattice", *Angew. Chem, Int. Ed. Engl.* 41, 2821-2824, 2002.

Also featured as a News and Views in *Nature Materials*, October 2002, vol. 1, pgs. 91-92.

188. (I) Moulton, B.; Zaworotko, M.J. "Coordination Polymers: Toward functional transition metal sustained materials and supermolecules", *Current Opinion in Solid State and Materials Science*, 6, 117-123, 2002.

189. (C) Kravtsov, V. Ch., Fonari, M.S., Zaworotko M.J., Lipkowski J., “A new polymorph of cis-transoid-cis dicyclohexano-18-crown-6”, *Acta Crystallogr.* C58, 683-684, 2002.
190. (C) Abourahma, H.; Moulton, B.; Kravtsov, V.; Zaworotko, M.J. “Supramolecular Isomerism in Coordination Compounds: Nanoscale Molecular Hexagons and Chains” *J. Amer. Chem. Soc.*, 124, 9990-9991, 2002.
191. (C) Wagner, B.D.; McManus, G.J.; Moulton, B.; Zaworotko, M.J. “Exciplex Fluorescence of $\{[Zn(4,4'-bipyridine)_{1.5}(NO_3)_2]\cdot CH_3OH\cdot 0.5pyrene\}_n$: a Coordination Polymer Containing Intercalated Pyrene Molecules”, *Chem. Commun.*, 2176-2177, 2002.
192. (F) Deoghoria, S.; Sain, S.; Moulton, B.; Zaworotko, M.J. Bera, S.K.; Chandra, S.K., “Synthesis, crystal structure and magnetic behavior of two new binuclear complexes bridged by a pentadentate ligand : $[Ni_2L_2(NCS)_2](ClO_4)_2$ and $[Ni_2L_2(NCO)_2](ClO_4)_2$, [L = pentadentate ligand]”, *Polyhedron*, 21, 2457-2461, 2002.
193. (R) Zaworotko, M.J.; Abourahma, H.A. “Self-assembly of crystals and nanocrystals”, Proceedings of the International Conference on Research Trends in Science and Technology – RTST 2002, 57-70.
194. (F) Shahgaldian, P.; Da Silva, E; Coleman, A.W.; Rather, B.; Zaworotko, M.J. "Para-acyl-calix-arene based Solid Lipid Nanoparticles (SLNs): a Detailed Study of the Preparation and Stability Parameters" *Int. J. Pharm.*, 253, 23-38, 2003.
195. (F) Srikanth, H.; Hajndl, R.; Moulton, B.; Zaworotko, M.J., “Magnetic Studies of Crystal-Engineered Molecular Nanostructures”, *J. Appl. Phys.*, 93, 7089-7091, 2003.
196. (C) Fleischman, S.; Morales L.; Moulton, B.; Rodríguez-Hornedo, N; Bailey Walsh, R.; Zaworotko, M.J., “Crystal Engineering of the Composition of Pharmaceutical Phases”, *Chem. Commun.*, 186-7, 2003.
197. (C) Rather, B.; Zaworotko, M.J. “A novel 3D network, $[Cu_2(glutarate)_2(4,4'-bipyridine)]\cdot 3H_2O$, that exhibits single-crystal to single-crystal dehydration and rehydration”, *Chem. Commun.*, 830-1, 2003.
198. (C) Moulton, B.; Abourahma, H; Bradner, M.W.; Lu, J.; McManus, G.; Zaworotko, M.J. “A new $6^5.8$ topology and a distorted $6^5.8$ $CdSO_4$ topology: two new supramolecular isomers of $[M_2(bdc)_2(L)_2]_n$ coordination polymers”, *Chem. Commun.*, 1342-1343, 2003.
199. (F) Abourahma, H.; Bodwell, G.J.; Lu, J.; Moulton, B.; Pottie, I.R.; Walsh, R.B.; Zaworotko, M.J. “Polymeric Metal-Organic Calixarenes from $[Cu_2(dicarboxylate)_2]_4$ Building Blocks: Structural Diversity via Atropisomerism”, *Crystal Growth & Design*, 3, 513-519, 2003.
200. (F) Fleischman, S.G.; Kuduva, S.S.; McMahan, J.A.; Moulton, B.; Walsh, R.B.; Rodriguez-Hornedo, N.; Zaworotko, M.J. “Crystal Engineering of the Composition of Pharmaceutical Phases. 2. Multiple Component Crystalline Solids Involving Carbamazepine”, *Crystal Growth & Design*, 3, 909-919, 2003.
201. (F) Abourahma, H.; McManus, G.J.; Moulton, B.; Walsh, R.B.; Zaworotko, M.J. “Design, Synthesis and Structural Diversity in Coordination Polymers”, *Macromolecular Symposia*, 196, 213-228, 2003.
202. (F) Rather, B.; Moulton, B.; Zaworotko, M.J.; Perret, F.; Morel-Desrosiers, N.; Da Silva, E.; Coleman, A.W. “Crystal Engineering of a Calix-arene Like Dimer Embedded in a Hydrophobic Cavity Formed by a Diammonium Host Matrix”, *Crystal Engineering*, 6, 15-21, 2003.
203. (F) Finden, Jeremy; Beck, Gavin; Lantz, Andrea; Walsh, Rosa; Zaworotko, Michael J.; Singer, Robert D. “Preparation and characterization of 1-butyl-3-methylimidazolium tetrakis(3,5-bis(trifluoromethyl) phenyl)borate, [bmim]BARF.” *Journal of Chemical Crystallography*, 33, 287-295, 2003.

204. (F) Simonov, Y.A.; Fonari, M.S.; Zaworotko, M.J.; Abourahma, H; Lipkouwski, J.; Ganin, E.V.; Yavolovskii, A.A. "From 1D strands to extended molecular assemblies in the binary compounds of dithiooxamide and dithiobiurea with crown ether". *Organic and Biomolecular Chemistry*, 1, 2922-2929, 2003.
205. (C) Tasiopoulos, A. J.; Wernsdorfer, W.; Moulton, B.; Zaworotko, M. J.; Christou, G. "Template Synthesis and Single-Molecule Magnetism Properties of a Complex with Spin $S = 16$ and a $[\text{Mn}_8\text{O}_8]^{8+}$ Saddle-Like Core." *Journal of the American Chemical Society*, 125, 15274-15275, 2003.
206. (F) Da Silva, E.; Nouar, F.; Coleman, A. W.; Rather, B.; Zaworotko, M. J. "Solution and Solid-State Interactions between Para-sulphonato-Calix-[4]-Arene and Some Common Organic Biological Buffers." *Journal of Inclusion Phenomena and Macrocyclic Chemistry*, 46, 161-166, 2003.
207. (P) Zaworotko, M. J.; Moulton, B.; Rodriguez-Hornedo, N. "Multiple-component solid phases containing at least one active pharmaceutical ingredient." PCT Int. Appl. (2003).
208. (C) McManus, G. J.; Wang, Z.; Zaworotko, M. J. "Suprasupermolecular Chemistry: Infinite Networks from Nanoscale Metal-Organic Building Blocks", *Crystal Growth & Design*, 4, 11-13, 2004.
209. (C) McMahon, J.A.; Zaworotko, M.J.; Remenar, J.F. "Polymorphism in butylated hydroxy anisole (BHA)", *Chem. Commun.*, 278-279, 2004.
210. (I) Almarsson, Ö.; Zaworotko, M.J. "Crystal Engineering of the Composition of Pharmaceutical Phases. Do Pharmaceutical Co-crystals Represent a New Path to Improved Medicines?" *Chem. Commun.*, 1889-1896, 2004.
211. (I) Zaworotko, M.J. "Crystal Engineering of the Composition of API's. Understanding Polymorphs and Designing Pharmaceutical Co-Crystals". *American Pharmaceutical Outsourcing*, 5 (4), 16, 2004.
212. (C) Perry, J.J.; McManus, G.J.; Zaworotko, M.J. "Sextuplet phenyl embrace in a metal-organic Kagomé lattice" *Chem. Commun.*, 2534-2535, 2004.
213. (P) Almarsson, Ö.; Bourghol Hickey, M.; Peterson, M.; Zaworotko, M.J.; Moulton, B.; Rodriguez-Hornedo, N. "Pharmaceutical cocrystal compositions of drugs such as carbamazepine, celecoxib, and olanzapine". PCT Int. Appl., 489 pp. WO2004078161.
214. (F) Ankisetty, S.; Nandiraju, S.; Win, H.; Park, Y.C.; Amsler, C.D.; McClintock, J.B.; Baker, J.A.; Diyabalanage, T.K.; Pasaribu, A.; Singh, M.P.; Maiese, W.M.; Walsh, R.D.; Zaworotko, M.J.; Baker, B.J. "Chemical investigation of predator-deterred macroalgae from the Antarctic peninsula" *J. Nat. Prod.*, 67, 1295-1302, 2004.
215. (F) Bose, D.; Rahaman, S.H.; Mostafa, G.; Walsh R.D.B.; Zaworotko, M.J.; Ghosh, B.K. "Synthesis, structure and properties of $[\text{Zn}(\text{dpa})(\text{N}_3)_2]$ and $[\text{Zn}(\text{dpa})(\text{N}_3)(\text{NO}_3)]_2$ (dpa=2,2'-dipyridylamine): composition tailored architectures". *Polyhedron*, 23, 545-552, 2004.
216. (F) Da Silva, E.; Nouar, F.; Nierlich, M.; Rather, B.; Zaworotko M.J.; Barbey, C.; Navaza, A.; Coleman, A.W. "A comparative structural study of four para-sulphonato-calix-[4]-arene organic di- and triammonium cation complexes". *Crystal Engineering*, 6, 123-135, 2003.
217. (F) Bose, D.; Banerjee, J.; Rahaman, S.H.; Mostafa, G.; Fun, H.K.; Walsh, R.D.B.; Zaworotko, M.J.; Ghosh, B.K. "Polymeric end-to-end bridged cadmium(II)thiocyanates containing monodentate and bidentate N-donor organic blockers: supramolecular synthons based on pi-pi and/or C-H center dot center dot center dot pi interactions". *Polyhedron*, 23, 2045-2053, 2004.
218. (F) Banerjee, J.; Bose, D.; Rahaman, S.H.; Walsh, R.D.B.; Zaworotko, M.J.; Ghosh, B.K. "Synthesis, characterisation and X-ray structure of a mononuclear zinc(II)azido complex containing tetradentate Schiff base". *Ind. J. Chem., Sect. A - Inorganic Bio-Inorganic, Physical, Theoretical and Analytical Chemistry*, 43, 1119-1122, 2004.

219. (F) Perry, J.J.; McManus, G.J.; Zaworotko, M.J. "4-Methoxypyridine-(pyridine-2,6-dicarboxylato-N,O,O')copper(II)". *J. Chem. Cryst.*, 34, 877-881, 2004.
220. (F) McMahon, J.A.; Bis, J.A.; Vishweshwar, P.; Shattock, T.R.; McLaughlin, O.L.; Zaworotko, M.J. "Crystal Engineering of the Composition of Pharmaceutical Phases 3. Primary Amide Supramolecular Heterosynthons and Their Role in the Design of Pharmaceutical Co-Crystals." *Zeit. Fur Krist.*, 220, 340-350, 2005.
221. (C) Shahgaldian, P.; Coleman, A.W.; Kuduva, S.S.; Zaworotko, M.J. "Amphiphilic Behavior of an Apparently Non-polar Calix-arene", *Chem. Commun.*, 1968-1970, 2005.
222. (F) Bis, J.; Zaworotko, M.J. "The 2-aminopyridinium-carboxylate supramolecular heterosynthon: a robust motif for generation of multiple component crystals." *Crystal Growth & Design*, 5, 1169-1179, 2005.
223. (C) Cecillon, S; Lazar, A.; Danylyuk, O.; Suwinska, K.; Rather, B.; Zaworotko, M.J.; Coleman, A.W. "Head-to-Tail Self-Assembly of a Calix[4]arene Inclusion Polymer Controlled by a Pendant Arm", *Chem. Commun.*, 2442-2444, 2005.
224. (F) Deoghoria, S; Bera, S.K.; Moulton, B.; Zaworotko, M.J.; Tuchagues, J.P.; Mostafa, G.; Lu, T.H.; Chandra, S.K. "Synthesis, crystal structure, and magnetic properties of binuclear Mn-III-azido and 1D polymeric Mn-II- μ (1,3)-thiocyanato novel species based on a neutral hexadentate Schiff base." *Polyhedron*, 24, 343-350, 2005.
225. (C) Foguet-Albiol, D.; O'Brien, T.A.; Wernsdorfer, W.; Moulton, B.; Zaworotko, M.J.; Abboud, K.A.; Christou, G. "DFT computational rationalization of an unusual spin ground state in an Mn-12 single-molecule magnet with a low-symmetry loop structure." *Angew. Chemie, Int. Ed.*, 44, 897-901, 2005.
226. (C) Wang, Z.; Kravstov, V. Ch.; Zaworotko, M.J. "Ternary Nets formed via Self-Assembly of Triangles, Squares and Tetrahedra", *Angew. Chemie, Int. Ed.*, 44, 2877-2880, 2005.

Featured in *Angewandte Chemie* as a "hot paper"

227. (F) Glister, J.F.; Vaughan, K.; Biradha, K.; Zaworotko, M.J. "(2S,7R,11S,16R)-1,8,10,17-Tetraazapentacyclo[8.8.1.18,17.02,7.011,16]icosane and its enantiomer. Synthesis, NMR analysis and X-ray crystal structure." *Journal of Molecular Structure*, 749, 78-83, 2005.
228. (F) Shahgaldian, Patrick; Coleman, Anthony W.; Rather, Beth; Zaworotko, Michael J. "Double Molecular Encapsulation of Tetrahydrofuran by an Amphiphilic Calix-[4]-arene." *Journal of Inclusion Phenomena and Macrocyclic Chemistry*, 52, 241-245, 2005.
229. (C) Mohamed, K.; Abourahma, H.; Zaworotko, M.J.; Harmon, J.P. "Persistent interactions between hydroxylated nanoballs and atactic poly(2-hydroxyethyl methacrylate) (PHEMA)." *Chem. Commun.*, 3277-3279, 2005.
230. (C) Shattock, T.R.; Vishweshwar, P; Wang, Z.; Zaworotko, M.J. "18-fold Interpenetration and Concomitant Polymorphism in the 2:3 Co-crystal of Trimesic Acid and 1,2-bis(4-pyridyl)ethane." *Crystal Growth & Design*, 5, 2046-2049, 2005.
231. (C) Vishweshwar, P.; McMahon, J.A.; Peterson, M.L.; Hickey, M.B.; Shattock, T.R.; Zaworotko, M.J. "Crystal engineering of pharmaceutical co-crystals from polymorphic active pharmaceutical ingredients." *Chem. Commun.*, 4601-4603, 2005.
232. (F) Rodopoulos, T.; Ishihara, K.; Rodopoulos, M.; Zaworotko, M.J.; Maeder, M.; McAuley, A. "Synthesis and reactivity of the macrobicyclic complexes (1,5,8,12-tetraaza-17-oxabicyclo[10.5.2]nonadecane)cobalt(III) perchlorate ([Co(L-1)(ClO₄)](ClO₄)₂), [(chloro(1,4,8,11-tetraaza-17-oxabicyclo[9.5.3]nonadecane)cobalt(III)

perchlorate ([Co(L-2)(Cl)](ClO₄)₂), (4,8-dimethyl-1,4,8,11-tetraaza-17-oxabicyclo[9.5.3]nonadecane)cobalt(III) perchlorate ([Co(L-3)(ClO₄)](ClO₄)₂), and (5,8-dimethyl-1,5,8,12-tetraaza-17-oxabicyclo[10.5.2]nonadecane)cobalt(III) perchlorate ([Co(L-4)(ClO₄)](ClO₄)₂) - Crystal structure of the L-2 complex." *Canad. J. Chem.*, **83**, 894-902, 2005.

233. (C) Vishweshwar, P.; McMahon, J.A.; Oliveira, M.; Peterson, M.L.; Zaworotko, M.J. "The predictably elusive form II of aspirin." *J. Amer. Chem. Soc.*, **127**, 16802-16803, 2005.

Also featured in Chemical & Engineering News as a science concentrate, November 21st 2005.

234. (P) Zaworotko, M.J.; Moulton, B. "Nanoscale Faceted Polyhedra." U.S. Patent 6,965,026, Nov. 15th 2005.

235. (F) Mohamed, K.; Gerasimov, T. G.; Abourahma, H.; Zaworotko, M. J.; Harmon, J. P. "Nanostructure matrix interactions in methacrylate composites." *Materials Science & Engineering, A: Structural Materials: Properties, Microstructure and Processing*, **A409**, 227-233, 2005.

236. (P) Hickey, M.B.; Peterson, M.; Almarsson, O.; Zaworotko, M.J.; Shattock, T.; McMahon, J.; Bis, J.; Remenar, J.; Tawa, M. "Preparation of novel pharmaceutical forms." PCT Int. Appl., WO2005089511, 2005.

237. (F) Zaworotko, M.J.; Hammud, H.H.; Abbas, I.; Kravtsov, V.Ch.; Masoud, M.S. "Ampicillin acidity and formation constants with some metals and their thermodynamic parameters in different media. Crystal structures of two polymorphs isolated from the reaction of ampicillin with copper(II)." *Journal of Coordination Chemistry*, **59**, 65-84, 2006.

238. (I) Vishweshwar, P.; McMahon, J.A.; Bis, J.A.; Zaworotko, M.J. "Pharmaceutical Co-crystals." *J. Pharm. Sci.*, **95**, 499-516, 2006.

239. (F) Bose, D.; Mostafa, G.; Bailey Walsh, R.D.; Zaworotko, M.J.; Ghosh, B.K. "Bimetallic complex of the type [Cu(tren)(NCS)]₄[Mn(NCS)₆]: A hydrogen bonded network structure." *Polyhedron*, **25**, 663-670, 2006.

240. (P) McMahon, J.; Peterson, M.; Zaworotko, M.J.; Shattock, T.; Hickey, M.B. "Pharmaceutical co-crystal compositions." PCT Int. Appl. WO2006007448, 2006.

241. (F) Bis, J.A.; Vishweshwar, P.; Middleton, R.A.; Zaworotko, M.J. "Concomitant and conformational polymorphism, conformational isomorphism, and phase relationships in 4-cyanopyridine•4,4'-biphenol co-crystals." *Crystal Growth & Design*, **6**, 1048-1053, 2006.

242. (F) Bose, D.; Mostafa, G.; Bailey Walsh, R.D.; Zaworotko, M.J.; Ghosh, B.K. "Synthesis, structure and properties of a trinuclear compound [Cu₂Cd(tren)₂(NCS)₆]: Example of dynamic molecular ion, [Cd(NCS)_{6-n}(SCN)_n]⁴⁺ (n=0-6)." *Polyhedron*, **25**, 1477-1482, 2006.

243. (C) Vishweshwar, P.; Beauchamp, D.A.; Zaworotko, M.J. "An acetic acid solvate of trimesic acid that exhibits triple inclined interpenetration and mixed supramolecular homosynthons", *Crystal Growth & Design*, **6**, 2429-2431, 2006.

244. (C) Bis, J.A.; McLaughlin, O.L.; Vishweshwar, P.; Zaworotko, M.J. "Supramolecular heterocatemers and their role in co-crystal design", *Crystal Growth & Design*, **6**, 2648-2650, 2006.

245. (P) Almarsson, Ö.; McMahon, J.; Peddy, V.; Peterson, M.; Zaworotko, M. J. "Novel polymorph of acetylsalicylic acid, and methods of making and using the same" PCT Int. Appl. WO 2006116473, 2006.

246. (R) Peterson, M.L.; Hickey, M.B.; Zaworotko, M.J.; Almarsson, Ö. "Expanding the scope of crystal form evaluation in pharmaceutical science" *J. Pharm. Pharmaceut. Sci.*, **9**, 317-326, 2006.

247. (R) Zaworotko, M.J. "Molecules to crystals, crystals to molecules... and back again?" *Crystal Growth & Design*, 7, 4-7, 2007.

248. (F) Hickey, M.B.; Peterson, M.L.; Scoppettuolo, L.A.; Morrisette, S.L.; Vetter, A.; Guzman, H.; Remenar, J.F.; Zhang, Z.; Tawa, M.D.; Haley, S.; Zaworotko, M.J.; Almarsson, O. "Performance Comparison of a Co-crystal of Carbamazepine with Marketed Product." *Eur. J. Pharmaceutics Biopharmaceutics*, 67, 112-119, 2007.

249. (F) Zaworotko, M.J., Hammud, H.H.; Kravtsov, V.C. "The co-crystal of iron(II) complex hydrate with hydroxybenzoic acid: [Fe(Phen)₃]Cl(p-hydroxybenzoate).2(p-hydroxybenzoic acid).7H₂O." *J. Chem. Cryst.*, 37, 219-231, 2007.

250. (C) Cheney, M.L.; McManus, G.J.; Perman, J.A.; Wang, Z.; Zaworotko, M.J. The role of co-crystals in solid-state synthesis: co-crystal controlled solid-state synthesis of imides." *Crystal Growth & Design*, 7, 616-617, 2007.

251. (P) Almarsson, O.; Bourghol-Hickey, M.; Peterson, M.L.; Zaworotko, M.J.; Moulton, B.; Rodriguez-Hornedo, N. "Pharmaceutical co-crystal compositions of drugs." U.S. Pat. Appl. Publ. (2007), 92pp., Cont.-in-part of U.S. Ser. No. 601,092. US 2007059356.

252. (P) Almarsson, O.; Bourghol-Hickey, M.; Peterson, M.L.; Zaworotko, M.J.; Moulton, B.; Rodriguez-Hornedo, N. "Pharmaceutical co-crystal compositions." U.S. Pat. Appl. Publ. (2007), 102pp., Cont.-in-part of U.S. Ser. No. 637,829. US 2007026078.

253. (F) Wang, Z.; Kravtsov, V. Ch; Walsh, R.B.; Zaworotko, M.J. "Guest-Dependent Cavities in Two-Dimensional Metal-Organic Frameworks Sustained by Tetrafluoro-1,3-benzenedicarboxylate." *Crystal Growth & Design*, 7, 1154-1162, 2007.

254. (F) Kasyan, O.; Healey, E.R.; Drapailo, A.; Zaworotko, M.J.; Cecillon, S.; Coleman, A.W.; Kalchenko, V. "Synthesis, Structure and Selective Upper Rim Functionalization of Long Chained Alkoxythiacalix[4]arenes." *Journal of Inclusion Phenomena and Macrocyclic Chemistry*, 58, 127-132, 2007.

255. (F) Bis, J.A.; Vishweshwar, P.; Weyna, D.; Zaworotko, M.J. "Hierarchy of Supramolecular Synthons: Persistent Hydroxyl...Pyridine Hydrogen Bonds in Co-Crystals that Contain a Cyano Acceptor." *Molecular Pharmaceutics*, 4, 401-416, 2007.

256. (F) Larsen, R.A.; McManus, Perry, J.J.; Otero-Rivera, E.; Zaworotko, M.J. Spectroscopic characterization of hydroxylated nanoballs in methanol." *Inorg. Chem.*, 46, 5904-5910, 2007.

257. (F) McManus, G.J.; Perry, J.J.; Perry, M.; Wagner, B.D.; Zaworotko, M.J. "Exciplex fluorescence as a diagnostic probe of structure in coordination polymers of Zn²⁺ and 4,4'-bipyridine containing intercalated pyrene and enclathrated aromatic solvent guests." *J. Am. Chem. Soc.*, 129, 9094-9091, 2007.

258. (C) Perry, J.J.; Kravtsov, V. Ch; McManus, G.J.; Zaworotko, M.J. "Bottom up Synthesis That Does Not Start at the Bottom: Quadruple Covalent Cross-Linking of Nanoscale Faceted Polyhedra." *J. Am. Chem. Soc.*, 129, 10076-10077, 2007.

Also featured as an Editor's Choice in *Science*, 317, 1149, 2007.

259. (C) McManus, G.J.; Wang, Z.; Beauchamp, D.A.; Zaworotko, M.J. "A novel metal-organic ternary topology constructed from triangular, square and tetrahedral molecular building blocks." *Chem. Commun.*, 5212-5213, 2007.

260. (C) Nouar, F.; Eubank, J.F.; Bousquet, T.; Wojtas, L.; Zaworotko, M.J.; Eddaoudi, M. "Supramolecular Building Blocks for the Design and Synthesis of Highly Porous Metal-Organic Frameworks". *J. Am. Chem. Soc.*, 130, 1833-1835, 2008.

261. (C) Cairns, A.J.; Perman, J.A.; Wojtas, L.; Kravtsov, V. Ch.; Alkordi, M.H.; Eddaoudi, M.; Zaworotko, M.J. "Supramolecular Building Blocks (SBBs) and Crystal Design: 12-Connected Open Frameworks Based on a Molecular Cubohemioctahedron". *J. Am. Chem. Soc.*, **130**, 1560-1561, 2008.
262. (I) Shan, N.; Zaworotko, M.J. "The role of co-crystals in pharmaceutical science". *Drug Discovery Today*, **13**, 440-446, 2008.
263. (I) Zaworotko, M.J. "Designer pores made easy". *Nature*, **451**, 410-411, 2008.
264. (F) Christou, G.; Tasiopoulos, A.; Mishra, A.; Wernsdorfer, W.; Moushi, E.; Moulton, B.; Zaworotko, M.; Abboud, K.; "Single-Molecule Magnets: A Family of MnIII/CeIV Complexes with a [Mn₈CeO₈]¹²⁺ Core". *Inorg. Chem.*, **47**, 4832-4843, 2008.
265. (F) Cheney, M.C.; Zaworotko, M.J.; Beaton, S.; Singer, R.D. "Cocrystal Controlled Solid-State Synthesis", *J. Chem. Ed.*, **85**, 1649-1651, 2008.
266. (F) Shattock, T.R.; Arora, K.K.; Vishweshwar, P.; Zaworotko, M.J. "Hierarchy of Supramolecular Synthons: Persistent Carboxylic Acid...Pyridine Hydrogen Bonds in Cocrystals that also Contain a Hydroxyl Moiety" *Crystal Growth & Design*, **8**, 4533-4545, 2008.
267. (P) Zaworotko, M.; Clarke, H.; Kapildev, A.; Kavuru, P.; Shytle, R.D.; Pujari, T.; Marshall, L.; Ong, T.T. "Nutraceutical co-crystal compositions", PCT Int. Appl. 2008, WO 2008153945 A2, filed June 6th 2008.
268. (P) Zaworotko, M.; Kesani, S. "Epigallocatechin-3-gallate crystal compositions", PCT Int. Appl. 2008, WO 2008153938 A2, filed June 6th 2008.
269. (F) Perman, J.A.; Zaworotko M.J. "Synthesis and Crystal Structure of a Polymorph of the DMF Solvate of the Dicopper tetracarboxylate Paddlewheel Complex Cu₂(p-aminobenzoate)₄(DMF)₂", *J. Chem. Cryst.*, **39**, 78-82, 2009.
270. (F) Weyna, D.R.; Shattock, T.; Vishweshwar, P.; Zaworotko, M.J. "Synthesis and structural characterization of cocrystals and pharmaceutical cocrystals: mechanochemistry vs. slow evaporation from solution", *Crystal Growth & Design*, **9**, 1106-1123, 2009.
271. (I) Arora, K.K.; Zaworotko, M.J. "Pharmaceutical co-crystals: A new opportunity in pharmaceutical science for a long-known but little studied class of compounds" in "Polymorphism in Pharmaceutical Solids, 2nd Ed.", edited by H. Brittain, published by Informa Healthcare, 2009.
272. (I) Perry, J.J.; Perman, J.A.; Zaworotko, M.J. "Design and synthesis of metal-organic frameworks using metal-organic polyhedra as supramolecular building blocks", *Chem. Soc. Rev.*, **38**, 1400-1417, 2009.
273. (I) Zaworotko, M.J. "A Reversible step forward", *Nature Chemistry*, **1**, 267-268, 2009.
274. (P) Eddaoudi, M.; Nouar, F.; Eubank, J.F.; Wojtas, L.; Bousquet, T.; Zaworotko, M. "Supramolecular assemblies and building blocks", US Patent Application 20090143596 A1, filed November 17th 2008.
275. (I) Shan, N.; Zaworotko, M.J. "Polymorphism and conjugation in drug delivery (crystal engineering)", *Burger's Medicinal Chemistry and Drug Discovery*, submitted for publication February 2009.
276. (N) Lawrence, H.R.; Li, Z.; M.L. Yip, R.M.L; Sung, S.-S.; Lawrence, N.J.; McLaughlin, M.L.; McManus, G.J.; Zaworotko, M.J.; Sebt, S.M.; Chen, J.; Guida, W.C. "Identification of a Disruptor of the MDM2-p53 Protein-Protein Interaction Facilitated by High-throughput *in Silico* Docking", *Bioorganic & Medicinal Chemistry Letters*, in press.

Conference Presentations (excluding presentations by co-workers)

1. Zaworotko, M.J.; Atwood, J.L.; "The X-ray Crystal Structures of Two Novel Bivalent Openshell Germanium Compounds $\text{Ge}(\text{NC}_9\text{H}_{18})_2$ and $\text{Ge}(\text{OC}_{15}\text{H}_{23})_2$." Presented by M. J. Zaworotko before the A.C.S. Southeastern Regional Meeting, Roanoke, Virginia, 1979.
2. Zaworotko, M.J.; Hrincir, D.; Shakir, R.; Atwood, J.L. "Comparison between Selected Trimethylaluminum and Trimethylgallium Based Liquid Clathrates." Presented by M.J. Zaworotko before the ACS Regional Meeting, 1980, New Orleans..
3. Zaworotko, M.J.; Atwood, J.L. "Structure of Reactivity of Pyrazolyl-bridged iridium dimers." Presented by M. J. Zaworotko, before the Southwestern A.C.S. Regional Meeting, 1981, San Antonio, Abstract 100.
4. Bushnell, G.W.; Fjeldsted, D.O.K.; Stobart, S.R.; Vefghi, R.; Zaworotko, M.J. "Isolation of Novel Dimeric Iridium Structures through Two-center Oxidative Addition to Bis(1,5-cyclooctadiene)di(μ -pyrazolyl) Di-iridium(I)." Presented by M.J. Zaworotko before the 11th International Conference on Organometallic Chemistry, 1983, Pine Mountain, Georgia.
5. Decker, M.J.; Stobart, S.R.; Zaworotko, M.J. "One-dimensional Chain Character of $[\text{Rh}(\text{CO})_2(\text{C}1)(\text{pzH})]$, pzH = pyrazole, and Structural Comparisons with Related Molecules." Presented by M.J. Zaworotko before the 11th International Conference on Organometallic Chemistry, 1983, Pine Mountain, Georgia.
6. Gaudet, M.; Zaworotko, M.J.; Hanson, A. "Interaction of Trialkylaluminum Compounds with $[(\text{arene})\text{Mn}(\text{CO})]_3^+$ cations." Presented by M.J. Zaworotko before the 70th Canadian Chemical Conference, 1987, Quebec City.
7. Gaudet, M.; Voliere, G.; Zaworotko, M.J. "Transformations of Aromatic Hydrocarbon Molecules Mediated by First Row Transition Metals." Presented by M.J. Zaworotko before the 4th IUPAC Symposium on Organometallic Chemistry Directed Toward Organic Synthesis, 1987, Vancouver.
8. Cameron, T.S.; Gaudet, M.V.; Linden, A.; White, P.S.; Zaworotko, M.J. "X-ray Structural Characterization of Tetrachloroaluminate Salts and Relevance to the Structure of Ionic Liquids." Presented by M. J. Zaworotko before the 3rd Chemical Congress of North America, 1988, Toronto.
9. Lindsay, R.I.; Peterson, D.C.; Zaworotko, M.J. "Applications of liquid clathrates in hydrocarbon separation: Removal of aromatics from model compound mixtures." Presented by M. J. Zaworotko before the 5th International Symposium on Inclusion Phenomena and Molecular Recognition, 1988, Orange Beach, Alabama.
10. Clerk, M.D.; Hooper, D.L.; Zaworotko, M.J. "Fluxional Properties of Sterically Crowded Sandwich Compounds." Presented by M.J. Zaworotko before the 72nd Canadian Chemical Conference, 1989, Victoria.
11. Zaworotko, M.J.; Sturge, K.C.; Clerk, M.D. "Effect of Transition Metal Complexation Upon Conformation and Reactivity of Arenes." **Invited talk** presented by M. J. Zaworotko before the CIC Atlantic Section Annual General Meeting and Conference, 1989, St. John's.
12. Zaworotko, M.J.; Peterson, D.C.; Christie, S. "Influence of Interionic Hydrogen Bonding on the Melting Point of Organic Cation Triiodide Salts." Presented by M. J. Zaworotko before the Gordon Research Conference on Molten Salts and Liquid Metals, 1989, Wolfeboro, N.H.
13. Clerk, M.D.; Sturge, K.C.; Zaworotko, M.J. "Trialkylaluminum Mediated C-C Bond Formation Reactions." Presented by M. J. Zaworotko before the 198th A.C.S. National Meeting, 1989, Miami Beach.
14. Zaworotko, M.J.; Leyte, D.; Peterson, D.C. "Synthesis, Structure and Applications of Low Melting Chloroaluminate Salts." Presented by M.J. Zaworotko before Molten Salts Discussion Group, July 1990, Swansea, Wales.
15. Zaworotko, M.J. "Ionic Liquids - Synthesis, Structure and Applications." **Invited talk** presented by M. J. Zaworotko before the 1990 Student Symposium on Inorganic Chemistry, Dalhousie University, Halifax.
16. Zaworotko, M.J. "An X-ray Structural Study of Low Melting Organic Cation Salts." Presented by M. J. Zaworotko before the 3rd International Symposium on Molten Salt Chemistry and Technology, 1991, Paris, France.
17. Zaworotko, M.J.; Wilkes, J.S. "Influence of Hydrogen Bonding and Aromatic Stacking upon the Physical Properties of Alkylimidazolium and Pyridinium Salts" Presented by M.J. Zaworotko before the 203rd ACS National Meeting, San Francisco, CA, April 1992
18. Copp, S.B.; Subramanian, S.; Zaworotko, M.J. "Supramolecular Chemistry of $[\text{Mn}(\text{CO})_3(\mu_3\text{-OH})]_4$: Coassembly of Hydrogen Bonded Diamondoid Networks" Presented by M.J. Zaworotko before the Fall Materials Research Society Meeting, Boston, MA, December 1992.

19. Zaworotko, M.J. "NSERC Grant Rationalization". 1993 Research at Small Universities Conference, Lennoxville, Quebec, May 1993.
20. Zaworotko, M.J.; Copp, S.B.; Subramanian, S. "Supramolecular Chemistry of $[M(\text{CO})_3(\mu_3\text{-OH})]_4$ (M = Mn, Re): Strict Self-assembly of Ordered 2-D and 3-D Solids" Presented by M.J. Zaworotko before the 76th Canadian Chemical Conference, June 1993, Sherbrooke, Que.
21. Zaworotko, M.J. "Water-tolerant Low Temperature Molten Salts". **Invited talk**, Gordon Conference on Molten Salts and Liquid Metals, Wolfeboro, NH, August 1993.
22. Zaworotko, M.J. "Strategies for Crystal Engineering of Polar Solids". Presented by M.J. Zaworotko before the Fall Materials Research Society Meeting, Boston, MA, December 1993.
23. Zaworotko, M.J. "Aspects of Noncovalent Bonding". **Keynote speaker** at the 1995 Atlantic CIC Student Conference, Halifax, May 1995.
24. Zaworotko, M.J. "Molecular Recognition in Solids: Cocrystals by Design". **Invited talk**, 78th Canadian Chemical Conference, May 1995, Guelph, Ontario.
25. Zaworotko, M.J. "From Molecules to Crystals". **Invited lecture**, NATO ARW on Modular Chemistry, September 1995, Estes Park, Colorado, USA.
26. Zaworotko, M.J. "Crystal Engineering of Functional Solids". **Invited lecture**, ESTAC annual meeting, November 1995, Toronto, Canada.
27. Zaworotko, M.J. "Non-interpenetrated Molecular Ladders". **Invited poster**, NATO ARW on Modular Synthesis, May 1996, Montreal, Canada.
28. Zaworotko, M.J. "Chains, Planes and Frames: Crystal Engineering of Transition Metal Sustained Coordination Polymers". **Invited lecture**, 5th International Summer School on Supramolecular Chemistry, June 1996, Ustron Poland.
29. Zaworotko, M.J. "Chains, Planes and Frames: How the Dimensionality of Hydrogen Bonded or Coordination Polymer Networks Influences Crystal Morphology". **Invited microsymposium lecture**, XVII International Union of Crystallography Congress, August 1996, Seattle, USA.
30. Zaworotko, M.J. "Coordination Polymers", **Invited Lecture**, NATO-ASI on Crystal Engineering, September 1996, Digby, Nova Scotia, Canada.
31. Zaworotko, M.J. "From Molecules to Crystals", **Invited Lecture**, XIIIth National School on Spectroscopy of Molecules and Crystals, April 1997, Sumy, Ukraine.
32. Zaworotko, M.J. "Supramolecular Isomerism", **Invited Lecture**, 80th Canadian Chemical Conference, June 1997, Windsor, Ontario.
33. Zaworotko, M.J. "Crystal Engineering of Cocrystals with Functional Properties". **Invited lecture**, 10th Organic Crystal Chemistry Symposium, August 1997, Rydzyna, Poland.
34. Zaworotko, M.J. "Polymorphism in Network Polymers". **Invited lecture**, 17th European Crystallographic Meeting, August 1997, Lisbon, Portugal.
35. Zaworotko, M.J. "Faculty Entrepreneurship: The Saint Mary's Experience". Canadian Research Management Association, September 1997, Halifax.
36. Zaworotko, M.J. "Crystal Engineering of Functional Solids". **Invited Lecture**, University of Siegen Summer School, Germany, October 1997.
37. Zaworotko, M.J. "Coordination Polymers". **Invited Lecture**, NATO ARW on "Current Challenges on Large Supramolecular Assemblies", October 1997, Athens, Greece.
38. Zaworotko, M.J. "Host-Guest Interactions in Coordination Polymers". **Invited Lecture**, 5th N. American Chemical Congress, November 1997, Cancun, Mexico.
39. Zaworotko, M.J. "From Molecules to Crystals". **Invited Lecture**. Symposium on "Chemical, Biological and Biomedical Applications of Supramolecular Systems", January 1998, Tel Aviv, Israel.
40. Zaworotko, M.J. "From Molecules to Crystals". **Invited Lecture**, International Symposium on Inclusion Phenomena and Molecular Recognition, June 1998, Warsaw, Poland.
41. Zaworotko, M.J. "The importance of weak hydrogen bonds in the context of the architectures adapted by coordination polymers". **Invited Lecture**, Boston ACS Meeting, August 1998.
42. Zaworotko, M.J. "From Molecules to Crystals". **Invited Lecture**, Gordon Conference on Organic Structures and Properties, September 1998, Fukuoka, Japan.
43. Zaworotko, M.J. "From Molecules to Crystals and Back Again". **Invited Lecture**, Materials Research Society Meeting, December 1998, Boston.

44. Zaworotko, "Crystal Engineering of Functional Solids". **Invited Lecture**, 62nd Okazaki conference, January 1999, Okazaki, Japan.
45. Zaworotko, M.J. "Strategies for the Design of Chiral Solids". **Invited Lecture**, PRESTO/FR Symposium on "Construction and Properties of Molecular Assemblies", January 1999, Okazaki, Japan.
46. Zaworotko, M.J. "Crystal Engineering of Functional Solids". **Invited Lecture**, Erice School on Crystallography/NATO-ASI, May 1999, Erice, Italy.
47. Zaworotko, M.J. "Zeolite and Clay Mimics: Design Strategies for Generation of Organic and Metal-Organic Adsorbents". **Invited Lecture**, Gordon Conference on Zeolites and Layered Materials, June 1999.
48. Zaworotko, M.J. "From Molecules to Crystals". **Invited Lecture**, Fourth International Conference on Materials Chemistry, Dublin, Ireland, July 1999.
49. Zaworotko, M.J. "From Achiral Building Blocks to Chiral Architectures", **Invited Lecture**, 18th Congress and General Assembly of the International Union of Crystallography, Glasgow, August 1999.
50. Zaworotko, M.J. "Novel Technology for Hog Manure Odour Control/Remediation", **Invited Lecture**, HEMS annual symposium, Ottawa, Canada, December 1999.
51. Zaworotko, M.J. "From Molecules to Crystals: Crystal Engineering and its Implication for Synthetic Chemistry", 17th Annual Florida Organic Chemistry Faculty Conference, Tampa, Florida, February 2000.
52. Zaworotko, M.J. "From Molecules to Crystals ... and Back Again". **Invited Lecture**, 10th Annual Meeting of the Association for Crystallization Technology, New Brunswick, New Jersey, April 2000.
53. Zaworotko, M.J. "Crystal Engineering of Zeolite and Clay Mimics". **Invited Lecture**, 83rd Canadian Society for Chemistry Conference, Calgary, Alberta, May 2000.
54. Zaworotko, M.J. "From Molecules to Crystals... and Back Again". 13th International Symposium on Surfactants in Solution, Gainesville, Florida, June 2000.
55. Zaworotko, M.J. "Design and Function of 2D and 3D Coordination Polymers". **Invited Lecture**, Royal Society of Chemistry, Dalton Discussion on Inorganic Crystal Engineering, Bologna, Italy, September 2000.
56. Zaworotko, M.J. "From Molecules to Crystals...and Back Again." **Keynote Lecture**. 1st International Workshop on Physical Characterization of Pharmaceutical Solids, Lancaster, PA, September 2000.
57. Zaworotko, M.J. "Coexisting Covalent and Noncovalent Nets". **Invited Lecture**, 35th ACS Midwest Regional Meeting, St. Louis, Missouri, October 2000.
58. Zaworotko, M.J. "Supramolecular Synthesis of Crystals". **Invited Lecture**, 35th ACS Midwest Regional Meeting, St. Louis, Missouri, October 2000.
59. Zaworotko, M.J. "Coexisting Covalent and Noncovalent Nets". **Invited Lecture**, ACS SW/SE Regional Meeting, New Orleans, Louisiana, December 2000.
60. Zaworotko, M.J. "Composite Materials by Design". **Invited Lecture**, Pacificchem 2000, Hawaii, December 2000.
61. Zaworotko, M.J. "Self-assembly of Discrete and Infinite Nanoscale Structures", **Invited Lecture**, AMRI-DARPA, New Orleans, February 2001.
62. Zaworotko, M.J. "Self-assembly of Discrete and Infinite Nanoscale Structures", **Invited Lecture**, XV International School-Seminar Spectroscopy of Molecular and Crystals, Chernihiv, Ukraine, June 2001.
63. Zaworotko, M.J. "Crystals and Nanocrystals by Design", **Invited Lecture**, ECM 20, "Supramolecular Materials Microsymposium", Krakow, Poland, August 2001.
64. Zaworotko, M.J. **Invited Lecture**, VIII International Seminar on Inclusion Compounds, Poland, September 2001.
65. Zaworotko, M.J. **Invited Lecture**, International Symposium on Crystal Chemistry, Chisinau, Moldova, October 2001.
66. Zaworotko, M.J. "From Molecules to Crystals: Crystal Engineering of Network Solids", **Invited Lecture**, 59th Pittsburgh Diffraction Conference, Cincinnati, October 2001.
67. Zaworotko, M.J. **Invited Lecture**, Modern Trends in Inorganic Chemistry, Calcutta, India, December 2001 (cancelled because of 9/11 related issues).
68. Zaworotko, M.J. **Invited Lecture**, Singapore International Chemical Conference, Singapore, December 2001 (cancelled because of 9/11 related issues).
69. Zaworotko, M.J. **Invited Keynote Lecture**, "Research Trends in Science and Technology 2002, Beirut and Byblos, Lebanon, March 2002.
70. Zaworotko, M.J. **Invited Lecture**, "Finite and Infinite Polygonal Assemblies", 223rd American Chemical Society National Meeting, Orlando, April 2002.
71. Zaworotko, M.J. **Invited Lecture**, "Binary Crystals by Design", 223rd American Chemical Society National Meeting, Orlando, April 2002.

72. Zaworotko, M.J. **Invited Lecture**, “Crystal Engineering with Pharmaceuticals: Design of the Composition and Structure of Pharmaceutical Phases”, Higuchi Research Seminar, Kansas, May 2002.
73. Zaworotko, M.J. **Invited Lecture**, “Self-assembly of Crystals and Nanocrystals”, American Crystallographic Association, San Antonio, May 2002.
74. Zaworotko, M.J. **Invited Lecture**, “Self-assembly of Crystals and Molecules with Nanoscale Features”. 85th Canadian Society for Chemistry Conference, Vancouver, British Columbia, June 2002.
75. Zaworotko, M.J. **Invited Microsymposium Lecture**, 19th Congress and General Assembly of the International Union of Crystallography, Geneva, Switzerland, August 2002.
76. Zaworotko, M.J. **Invited Lecture**, SE Region ACS, Charleston, November 2002.
77. Zaworotko, M.J. **Invited Lecture**, “Crystal Engineering of the Composition of Pharmaceutical Phases”, ACS Prospective on Polymorphism in Crystals, Tampa, February 2003.
78. Zaworotko, M.J. “Crystal Engineering of the Composition of Pharmaceutical Solids”, 225th ACS National Meeting, New Orleans, March 2003.
79. Zaworotko, M.J.; Moulton, B.; Lu, J.; McManus, G.; Wong, R.; Rather, B. **Invited Lecture**, “Crystal Engineering of Coordination Compounds with Nanoscale Features”, FAME 2003, Orlando, May 2003.
80. Zaworotko, M.J. **Invited Lecture**, “Crystal Engineering of the Composition of Pharmaceutical Phases”, Strategies for Improving Solubility Workshop, Philadelphia, June 2003.
81. Zaworotko, M.J. **Invited Lecture**, “From Crystal Engineering of Coordination Polymers to Design of Nanoscale Molecules”, 39th IUPAC Congress, Ottawa, Canada, August 2003.
82. Zaworotko, M.J. **Invited Lecture**, “Coordination Polymers with Nanoscale Features”, 39th IUPAC Congress, Ottawa, Canada, August 2003.
83. Zaworotko, M.J. **Invited Lecture**, “Crystal Engineering of the Composition of Pharmaceutical Phases”, 39th IUPAC Congress, Ottawa, Canada, August 2003.
84. Zaworotko, M.J. **Invited Lecture**. “Crystal Engineering of the Composition of Pharmaceutical Phases”, Strategies for Improving Solubility Workshop, Brussels, Belgium Oct. 2003.
85. Zaworotko, M.J. **Invited Lecture**. “Self-Assembly of Nanoscale Chemical Structures”, ICMAT, Singapore, Dec. 2003.
86. Zaworotko, M.J. **Invited Lecture**. “Crystal Engineering of the Composition of API’s”, Determining Factors for Measuring Permeability Workshop, Philadelphia, January 2004.
87. Zaworotko, M.J. **Invited Lecture**, “Crystal Engineering of the Composition of Pharmaceutical Phases”, ACS Prospective on Polymorphism in Crystals, Tampa, February 2004.
88. Zaworotko, M.J. **Invited Lecture**. “Crystal Engineering of the Composition of API’s”, “Polymorphism and Crystallization Forum 2004, Princeton, April 2004.
89. Zaworotko, M.J. **Invited Lecture**. “Crystal Engineering of Coordination Compounds with Nanoscale Features”, 80th FAME 2004, Orlando, May 2004.
90. Zaworotko, M.J. **Invited Lecture**. “Crystal Engineering of the Composition of Pharmaceutical Phases”, Solubility Workshop, Philadelphia, June 2004.
91. Zaworotko, M.J. **Invited Lecture**. “Crystal Engineering of the Composition of API’s”, Polymorphism Workshop, Philadelphia, June 2004.
92. Zaworotko, M.J. **Invited Lecture**. “Supramolecular Synthesis”, Green Chemistry Gordon Conference, July 2004.
93. Zaworotko, M.J. **Invited Lecture**. “Do Pharmaceutical Co-crystals Represent a Path to Improved Medicines”, Strategies for Improving Solubility Workshop, Brussels, Belgium Sep. 2004.
94. Zaworotko, M.J. **Invited Lecture**. “Crystal Engineering of the Composition of API’s”, Polymorphism, Crystallization and Salt Selection Workshop, Washington, DC, February 2005.
95. Zaworotko, M.J. **Invited Lecture**. “Pharmaceutical Co-crystals – Do They Represent a New Path to Improved Medicines”, Polymorphism and Crystallization 2005, London, UK, March 2005.
96. Zaworotko, M.J. **Invited Lecture**. “Pharmaceutical Co-crystals – Do They Represent a New Path to Improved Medicines”, American Crystallographic Association Annual Meeting, Orlando, May 2005.
97. Zaworotko, M.J. **Invited Lecture**. “From Molecules to Crystals – and Back Again”, American Crystallographic Association Annual Meeting, Orlando, May 2005.
98. Zaworotko, M.J. **Invited Lecture**. “The role of co-crystals in supramolecular and solid-state chemistry”, 2nd International Conference on Green and Sustainable Chemistry and 9th Annual Green Chemistry and Engineering Conference, Washington DC, June 2005.

99. Zaworotko, M.J. **Invited Lecture.** "From Molecules to Crystals – and Back Again", Rare Earth Research Conference (RERC05), Keystone, Colorado, June 2005.
100. Zaworotko, M.J. **Invited Microsymposium Lecture,** Polymorphism in Co-crystals and Pharmaceutical Co-crystals", 20th Congress and General Assembly of the International Union of Crystallography, Florence, Italy, August 2005.
101. Zaworotko, M.J. **Invited Lecture.** "From molecular building blocks to binary and ternary nets", European Science Foundation meeting on "Supramolecular Chemistry: Molecular Architectures and Systems", Obernai, France, October 2005.
102. Zaworotko, M.J. **Keynote Lecture.** "From Molecules to Crystals... and Back Again", Singapore International Chemistry Conference IV, Singapore, December 2005.
103. Zaworotko, M.J. **Invited Lecture.** Pacifichem 2005, Honolulu, Hawaii, December 2005.
104. Zaworotko, M.J. **Invited Lecture.** "Realizing the potential of co-crystals as novel patentable materials", Developing IP strategies for crystalline forms conference, London, UK, December 2005.
105. Zaworotko, M.J. **Invited Lecture.** "Designing Pharmaceutical Co-crystals", Polymorphism and Crystallization 2006, London, UK, March 2006.
106. Zaworotko, M.J. **Invited Lecture.** "Design and preparation of co-crystals", ACS Prospective on Process Crystallization in the Pharmaceutical and Chemical Industry, Philadelphia, April 2006.
107. Zaworotko, M.J. **Invited Lecture.** "Do pharmaceutical co-crystals represent a new path to improved medicines?", FAME2006, Orlando, May 2006.
108. Zaworotko, M.J. **Invited Lecture.** "Crystal engineering of metal-organic nets with form and function", FAME2006, Orlando, May 2006.
109. Zaworotko, M.J. **Invited Lecture.** "The Role of Co-crystals in Pharmaceutical Form and Formulation", Polymorphism and Crystallization 2006, IQPC Meeting, San Diego, May 2006.
110. Zaworotko, M.J. **Invited Lecture.** 89th Canadian Society for Chemistry Conference, Halifax, Nova Scotia, May 2006.
111. Zaworotko, M.J. **Invited Lecture.** "Design and preparation of co-crystals", INDABA5, Kruger National Park, South Africa, August 2006.
112. Zaworotko, M.J. **Invited Lecture.** "Pharmaceutical co-crystals: do they represent a new path to improved medicines?", British Pharmaceutical Conference, Manchester, UK, September 2006.
113. Zaworotko, M.J. **Invited Lecture.** "Polymorphism in co-crystals", Pharmaceutical co-crystals, IQPC Meeting, Amsterdam, September 2006.
114. Zaworotko, M.J. **Invited Lecture.** "The role of co-crystals in supramolecular and solid-state chemistry", XVth Conference on Physical Methods in Coordination and Supramolecular Chemistry, Chisinau, Moldova, September 2006.
115. Zaworotko, M.J. **Invited Lecture.** "Design and preparation of co-crystals", ACS Prospective on Crystallization Process Development: Case Studies & Research, Boston, February 2007.
116. Zaworotko, M.J. **Opening Plenary Lecture.** XIth International Seminar on Inclusion Compounds, Kyiv, Ukraine, June 2007.
117. Zaworotko, M.J. **Invited Lecture.** "Back to the future for metal-organic materials", Nano-Structured Porous Materials Workshop, DOD meeting, Washington DC, September 2007.
118. Zaworotko, M.J. **Invited Lecture.** "New Intellectual Property Opportunities for Old Natural Products via New Crystal Forms", Pharmaceutical Co-Crystals 2007, IQPC Meeting, Amsterdam, September 2007.
119. Zaworotko, M.J. **Invited Lecture.** SERMACS 2007, Greenville, SC, October 2007.
120. Zaworotko, M.J. **Plenary Lecture.** "Back to the future for metal-organic materials", 5th National Symposium on Structural Chemistry (5th NSSC), China and the Symposium on Chinese Strategy of Crystal Growth & Design, Fujian, China, October 2007.
121. Zaworotko, M.J. **Invited Lecture.** Polymorphism and Crystallization Conference, Clearwater, FL, November 2007.
122. Zaworotko, M.J. **Invited Lecture.** "Co-crystals by design: New opportunities for old natural products through crystal engineering." Polymorphism and Crystallization, Philadelphia, December 2007.
123. Zaworotko, M.J. **Invited Lecture.** "The role of co-crystals in pharmaceutical science", International Symposium on "Challenges and Innovations in Pharmaceutical Research" State University of Morelos, Cuernavaca, Mexico, March 2008.

124. Zaworotko, M.J. **Invited Lecture**. “Co-crystals involving chiral co-crystal formers”, Polymorphism and Crystallization 2008, London, UK, March 2008.
125. Zaworotko, M.J. **Invited Lecture**. “Back to the future: new ligands for old topologies”. 235th ACS National Meeting, New Orleans, LA, April 2008.
126. Zaworotko, M.J. **Invited Lecture**. “Increasing solubility by crystal engineering and co-crystal formation”. 35th Annual Meeting & Exposition of the Controlled Release Society, New York, July 2008.
127. Zaworotko, M.J. **Invited Lecture**. “Pharmaceutical co-crystals.”236th ACS National Meeting, Philadelphia, PA, August 2008.
128. Zaworotko, M.J. **Invited Keynote Lecture**. “The role of co-crystals in pharmaceutical science.” 21st Congress and General Assembly of the International Union of Crystallography, Osaka, Japan, August 2008.
129. Zaworotko, M.J. **Keynote Speaker**. “New approaches to solvent-free synthesis: co-crystal controlled solid-state synthesis (C³S³)”, British Pharmaceutical Congress, Manchester, September 2008.
130. Zaworotko, M.J. **Invited Lecture**. “The broader opportunities for co-crystals in drug discovery and development”, Pharmaceutical Cocrystals 2008, Amsterdam, September 2008.
131. Zaworotko, M.J. **Invited Lecture**. “Pharmaceutical Co-crystals: History and Relevance to Drug Development”, Drug Formulation 2008, Philadelphia, November 2008.
132. Zaworotko, M.J. “Crystal engineering strategies for improving the bioavailability of low solubility drugs”, UK-US International Alzheimer’s Disease Symposium, Tampa, November 2008.
133. Zaworotko, M.J. **Invited Lecture**. “The broader opportunities for co-crystals in drug discovery and development”, Indo-US Bilateral Workshop on Cocrystals and Polymorphs, Mysore, India, February 2009.
134. Zaworotko, **Invited Lecture**, “From molecules to crystals, and back again”, 38th National Seminar on Crystallography, Mysore, India, February 2009.
135. Zaworotko, M.J. **Invited Lecture**, “Pharmaceutical co-crystals – Do they represent multiple paths to new and improved medicines”, Latin American Symposium on Polymorphism and Crystallization in Drugs and Medicines, Sao Pedro, Brazil, March 2009.
136. Zaworotko, M.J. **Plenary Lecture**, “From Molecules to Crystals and Back Again:Crystal Engineering of functional Solids”, Taibah International Chemistry Conference, Al Madinah, Saudi Arabia, March 2009.
137. Zaworotko, M.J. **Invited Lecture**, “The Role of Cocrystals in Pharmaceutical Science and Solid-State Chemistry”, Molecules, Materials, Medicine, M³-2009, Santa Barbara, May 2009.
138. Zaworotko, M.J. **Invited Lectures**, 2009 Beijing Summer School on “Crystallography, Crystal Engineering and Functional Materials”, Beijing, China, July 2009.
139. Zaworotko, M.J. **Invited Lecture**, “Structure-Property Relationships in Multiple Component Crystals”, Pharmaceutical Co-Crystals 2009, Amsterdam, September 2009.
140. Zaworotko, M.J. **Keynote Lecture**, 2nd Asian Conference on Coordination Chemistry, Nanjing, China, November 2009.
141. Zaworotko, M.J. **Invited Lecture**, Singapore International Chemical Conference 6 (SICC-6), Singapore, December 2009.

Conference/symposium organizer

1. ACS Great Lakes Regional Meeting, DeKalb Illinois, 1990. A symposium on organometallics in synthesis.
2. Halifax CSC 1991: a symposium devoted to main group chemistry.
3. Halifax Atlantic CIC: conference titled "Synthetic Chemistry in Atlantic Canada"
4. Guelph CSC 1995: symposium titled "Back to the Future: A Symposium Celebrating 100 years of X-rays".
5. Newfoundland CSC 1996: symposium titled "Extended Metal Systems" (with C.R. Lucas).
6. Nova Scotia, NATO ASI 1996: two week summer school titled "Crystal Engineering: The Design and Application of Functional Solids"(with K.R. Seddon).
7. Cancun, 5th N. American Chemical Congress 1997. "Crystal Engineering" (with R.D. Rogers).
8. Washington DC American Crystallographic Association Meeting 1998, Transactions Symposium. "Crystal Engineering" (with R.D. Rogers).
9. Anaheim ACS Meeting 1999: inorganic division symposium "Transition metal coordination polymers" (with R.D. Rogers)
10. Glasgow IUCr, 1999: symposium devoted to crystal engineering (with R.D. Rogers, G.R. Desiraju)
11. Gordon Research Conference, 2000, "Organic Structures and Properties" (co-chair with M.D. Ward)
12. Pacifichem 2000, Hawaii, 2000, symposium devoted to applications of crystal engineering (with R.D. Rogers)
13. SERMACS 2002, Charleston, SC, "Crystals and Nanocrystals by Design" (with W.T. Pennington).
14. 2nd International Conference on Green and Sustainable Chemistry and 9th Annual Green Chemistry and Engineering Conference, Washington DC, June 2005, "Non-covalent Derivatization" (with W. Jones).