

RESUME

Full name: Zeev Gross

Date and place of birth: September 27, 1954, Afula - Israel.

Marital status (optional): Married + 4

Web site: http://schulich.technion.ac.il/Zeev_Gross.htm

ACADEMIC DEGREES

Ph.D.: 1987, Chemistry, Bar Ilan University, under Prof. S. Hoz

M.Sc.: 1982, Chemistry, Bar Ilan University

B.Sc.: 1979, Chemistry, Bar Ilan University

ACADEMIC APPOINTMENTS

8/2013 and 8/2014: Moore Distinguished Scholar, California Institute of Technology

2/2004 – present: R.M. & R.D. Blum Professor, Dept. of Chemistry, Technion

7/2002-1/2004: Full Professor, Dept. of Chemistry, Technion

8/1999-6/2002: Associate Professor, Dept. of Chemistry, Technion

8/1995-7/1999: Senior Lecturer, Dept. of Chemistry, Technion

10/1990-7/1995: Lecturer, Dept. of Chemistry, Technion

6/1988-9/1990: Fulbright Postdoctoral Fellow, Dept. of Chemistry, Princeton University

PROFESSIONAL EXPERIENCE

3/2009-8/2009: Visiting Scientist (Sabbatical leave), California Institute of Technology

3/1999-6/1999: Visiting Scientist (Sabbatical leave), California Institute of Technology

3/2018-9/2018: Visiting Scientist (Sabbatical leave), City of Hope

TECHNION ACTIVITIES

- Member of the Senate committee for international awards, 1.2004 – 1.2005.
- Member of the Senate committee for academic promotion (all ranks, up to full Professor), 1.2004 – 31.12.2005
- Member of the Inter-Senate committee for Academic Freedom, 12.2004 – 2.2005 (resigned).
- Member of the Technion Senate, 1.1.2006 – 31.12.2010.
- Member of the Senate committee for the Harvey prize, 2006.
- Member of the Technion's steering committee, 1.1.2011-3.2011
- Deputy Vice President for academic affairs, 3.2011 – 10.2011
- Elected Member of the Technion Senate, 3.2013 – present.
- Member of the Technion's steering committee, 9.2014-12.2014 (resigned when appointed as dean)
- Member of the Senate committee for the Harvey prize, 2015 & 2017 (Chairman)
- Dean, Division of External & Continuing Studies, 1.2015-3.2018
- Dean, Division of External & Continuing Studies, (2nd term), 9.2018-present

PUBLIC PROFESSIONAL ACTIVITIES

- Organizing Committee of *The 9th International Symposium on Homogeneous Catalysis*, Jerusalem, Israel: August 21-26, 1994.
- Organizing Committee of *The 20th International Symposium on Macrocyclic Chemistry*, Jerusalem, Israel: July 2-7, 1995.
- Organizing Committee of *The Israel Chemical Society 62nd Annual Meeting*, The Technion, Haifa, Israel: February 1997.
- Guest Editor (together with H. B. Gray) of *The Journal of the Israel Chemical Society*, special issue devoted to Bioinorganic Chemistry, published in May, 2000.
- Organizing Committee of *The XIIth International Symposium on Supramolecular Chemistry (ISSC XII)*, Eilat-Israel: October 13-18, 2002.
- Editorial Board of the *Journal of Porphyrins and Phthalocyanines* , 1.2001 –
- Editorial Board of the *Journal of Inorganic Biochemistry*, 1.2001 – 1.2005
- Advisory Committee Member of IUPAC (*International Union of Pure and Applied Chemistry*), chosen by the Israel Chemical Society: 1.2004 –

- Organizing Committee of *The 38th International Conference on Coordination Chemistry (ICCC 38)*, Jerusalem-Israel: July 20-25, 2008.
- Organizer of the “Catalytic Processes” section for *The 5th International Conference on Porphyrins and Phthalocyanines*, Moscow-Russia, July 13-18, 2008.
- Organizer of the “Non-PDT Medicinal Chemistry” session for *The 7th International Conference on Porphyrins and Phthalocyanines*, Jeju-Korea, July 13-18, 2012.
- Organizing Committee of the *2nd EuCheMS Inorganic Chemistry Division Meeting*, Jerusalem-Israel: July 7-11, 2013.
- Organizer and Chairman of the COST meeting on “*Corroles and Porphyrins as lead structures for the design of efficient water splitting catalysts*”, Technion, November 24 - 26, 2013.
- Organizer of the “Energy” session for *The 8th International Conference on Porphyrins and Phthalocyanines*, Istanbul-Turkey, June 22-27, 2014.
- Chairman of *Archimedes*, the integration of high school pupils into academic Chemistry studies at the Technion, 1.2012 – present.
- Chairman of the national Chemistry Olympiad, *Chimiada*, 1.2012 – present.
- Chairman of the national team for the *International Chemistry Olympiad*, 1.2012 – present.
- Organizer and Chairman of the Schulich Summer School on “*Science and Technology of Macrocyclic Metal Complexes*”, Technion, June 29 - July 1, 2014.
- Organizer and Chairman of the Schulich Winter School on “*Frontiers in Inorganic Chemistry*”, honoring Prof. Harry B. Gray’s 80th Birthday, Technion, December 1-3, 2015.
- Organizer of the “Photo- and Electro-Catalytic Processes” session for *The 9th International Conference on Porphyrins and Phthalocyanines*, Nanjing-China, July 3-8, 2016.
- Organizer of the “Photo- and Electro-Catalytic Processes” session for *The 10th International Conference on Porphyrins and Phthalocyanines*, Munich-Germany, July 1-6, 2018.

- Organizer of the 1st Israel-Japan conference on *Catalysis for the Benefit of Society*, November 2-6, Technion.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

The Israel Chemical Society

The Society of Porphyrins and Phthalocyanines

The Society of Bioinorganic Chemistry

The American Chemical Society

FELLOWSHIPS, AWARDS and HONORS

(Year, honor – list prizes, awards, or important nominations)

Bar-Ilan interdisciplinary award for excellent M.Sc. candidates, 1981.

Landau prize for excellence (M.Sc. thesis), 1983.

Bar-Ilan scholarship for excellent starting doctoral students, 1984.

Bar-Ilan scholarship for excellence (Ph.D. students), 1985.

Pulver award for excellence (Ph.D. candidates), 1986.

Fulbright postdoctoral fellowship, 1988.

Koebner-Klein award for starting faculty members, 1991.

Henri Gutwirth award for excellence in research, 1995.

Ray and Miriam Klein award for "The development of porphyrin-like catalysts for asymmetric catalysis", 1999.

Mitchel award for the promotion of inventions with commercial potential, 4/2000.

Hershel Rich - Technion Innovation Award, 5/2000.

Henry Taub Prize for Excellence in Research – 5/2003.

The Reba May & Robert D. Blum Named Professorship ("Kathedra") – 2/2004.

Schulich Award for Excellence in teaching, 2009.

Hershel & Hilda Rich Innovation Award, 6/2013

Moore Distinguished Scholar, Caltech, 8/2013

Israel Chemical Society Award for the Outstanding Scientist, 2/2014

Xingda Lecture, Peking University, Beijing, 9/2014

Resnick Distinguished Lecture, California Institute of Technology, 9/2017

Mahler Lecture, Univ. of Texas at Austin, 4/2018

JSPS Invitational Fellowship for Research in Japan, 1/2018

Hans Fischer Career Award in Porphyrin Chemistry, 7/2018

GRADUATE STUDENTS

Completed Theses

The primary supervisor is Zeev Gross in all cases. Additional supervisors are mentioned wherever relevant.

1. Claudia M. Barzilay, M.Sc., 12/93; "Preparation, Isolation and Characterization of Metalloporphyrins in Special Oxidation States."
2. Iris Toledano, M. Sc., 11/94; "Preparation of New Metalloporphyrins and Exploration of their Efficiency as Oxygenation Catalysts." (Wolf prize for excellent M. Sc. students, 1994)
3. Merav E. Tal, M.Sc., 1/95; "Preparation, Characterization and Reactivity of Oxometalloporphyrins." (Gutwirth award for excellent M. Sc. students, 1993)
4. Shay Nimri, M.Sc., 3/96; "Oxoiron(IV) Porphyrin Cation Radicals: The Effect of Axial Ligands on their Electronic Structure and Chemical Reactivity." (Gutwirth award for excellent M. Sc. students, 1995)
5. Lilia Kaustov; M.Sc., 11/96; "Manganese Porphyrin Catalyzed Halogenation of Hydrocarbons."
6. Liliya Simkhovich, M.Sc., 6/97; "Structure-Reactivity-Selectivity Relationships in Iron Porphyrin Catalyzed Oxygenation of Alkanes"
7. Claudia M. Barzilay, Ph.D., 6/98; "Less Common Oxidation States and Unique Metal-Ligand Interactions in Iron and Ruthenium Porphyrin Complexes." (Wolf prize for excellent Ph.D. students, 1996)
8. Santiago Ini, Ph.D., 3/00; "New Chiral Metalloporphyrins as Catalysts for Asymmetric Oxygenation of Hydrocarbons." (Wolf prize for excellent Ph.D. students, 1998; The Israel Chemical Society Award for best graduate students, 1999).
9. Atif Mahammed, Ph.D., 6/00; "Exploration of Osmium Porphyrin Chemistry." (Gutwirth award for excellent Ph.D. students, 1998).
10. Galina Golubkov, M.Sc., 3/01; "Corroles: Synthesis, Modification and Metal Complexes".
11. Liliya Simkhovich, Ph.D., 12/01; "Synthesis, Characterization, and Catalytic Applications of Novel Porphyrins and Corroles and their Metal Complexes". (The Israel Chemical Society Award for best graduate students, 2001; Gutwirth award for excellent Ph.D. students, 2001).
12. Inna Luobeznova, M.Sc., 3/03 ; " Mono- and Dimetallic Metal Complexes of Corroles".
13. Merav Abdales, M.Sc., 10/04; "Interactions of Water-Soluble Corroles with Proteins"
14. Elena Tkachenko, Ph.D., 10/04; " Selective Functionalization of Corroles".
15. Galina Golubkov, Ph.D., 3/05- ; "Catalysis of Atom and Group Transfer by Metal Corroles".

16. Ruth Goldschmidt, M.Sc., 4/05; "New Corroles with Desirable Features for Light-driven Applications"
17. Marina Raizman, M.Sc., 8/05; "Molybdenum Corroles"
18. Iris Aviv, Ph.D., 4/07-; "Catalysis Based on Unique Chemistry of Metalloporroles". (The Israel Chemical Society Award for best graduate students, 2007)
19. Adi Netzer, M.Sc., 4/07- ; "Bioconjugated Corroles". (Sherman interdisciplinary Scholarship (2004); Gutwirth Scholarship (2005))
20. Zoya Gershman, M.Sc., 5/07; "Positively charged corroles".
21. Inna Luobeznova, Ph.D., 6/07; "Activation of Small Molecules by Low Valent Corrole Metal Complexes".
22. Katya Buchman; M.Sc., 6/07; "Oxygen Atom Transfer Catalysis by Manganese Corroles".
23. Sharon Navon; M.Sc., 10/07; "Reactivity and Electronic Structures of Iron Corroles".
24. Meital Eckshtain; M.Sc., 1/2009; "Corrole metal complexes as catalysts for decomposition of superoxide anion radical"
25. Oren Pniel; M.Sc., 1/2009; "Corroles as Chromophores in Dye Sensitized Solar Cells"
26. Shlomit Avidan; M.Sc., 9/2009; "Corroles as Catalysts for Decomposition of Reactive Oxygen and Nitrogen Species"
27. Izana Etinger; M.Sc., 3/2010; "Advanced Catalysis by New Corrole Metal Complexes" (Jacobs Scholarship, 2008-9).
28. Adi Haber, Ph.D. 11/2011; "Metalloporroles for Attenuation of Atherosclerosis" [Sherman interdisciplinary Scholarship (2004); Gutwirth Scholarship (2005); Segal prize (2006); Fine Scholarship (2007); Jacobs Scholarship (2009); Horev prize in medicinal chemistry (2011); Springer Thesis Prize for outstanding PhD research (2012)]. Additional supervisor: Michael Aviram, Faculty of Medicine.
29. Zoya Okun, Ph.D. 7/2012; "Metalloporroles for Therapeutic and Related Applications" (Faculty Excellence Scholarship, 2010, Segal prize, 2011, ICS excellence for graduate students, 2012).
30. Tal Kfir, M.Sc., 10/2013
31. Matan Solliway, M.Sc. 2/2014; "Corroles, novel drugs for treatment of neurodegenerative diseases"
32. Lena Rabinovich, Ph.D., 2/2015; "Gold Corroles"
33. Izana Nigal-Etinger; Ph.D., ""
34. Sagi Sevilia, M.Sc., 4/2015; "New approaches for water oxidation"
35. Jenia Vestfrid, Ph.D. 8/2016; "Rational Design of Corroles with Superior Photophysical and Chemical Properties for a Variety of Applications" (Fein award, 2012)

- 36. Anh Le, M.Sc. candidate, 10.2014-
- 37. Lena Landau, M.Sc. candidate; 3.2015-
- 38. Matan Solliway, Ph.D. candidate, 3.2014-
- 39. Vinay K. Sharma, M.Sc., 5.2019

Theses in Progress

- 40. Qiucheng Chen, Ph.D. candidate, 10.2016-
- 41. Xuan Zhan, Ph.D. candidate,
- 42. Peter Teplitzki, M.Sc. candidate, part time from 10.2016
- 43. Mor Hayat, M.Sc. candidate, 10-2019-
- 44. Vinay K. Sharma, Ph.D. candidate, 6.2019

Postdocs and Ph.D. Co-workers

Past

- 1. Dr. R. Puthisigamani Pandian, 12.95-4.96; "Metal Chelation by Dioxaporphyrins"
- 2. Dr. Nona Khaselev, 3.96-5.97; "Water-Soluble Porphyrins for Non-Radiative Therapy"
- 3. Dr. Irena Saltsman, 4.95- 3.99; "Core-Modified Porphyrins"
- 4. Dr. Nitsa Galili, 8.97-9.99; "Water-Soluble Porphyrins and Related Macrocycles for Non-Radiative Therapy"
- 5. Dr. Parameswar Iyer, 10.99-10.01; "Asymmetric Catalysis by Porphyrin and Corrole Metal Complexes"
- 6. Dr. Liliya Simkhovich, 12.02-10.04; "Asymmetric Catalysis by Corrole Metal Complexes"
- 7. Dr. Anil Kumar, 4/2009-9.2010; "Vanadium- and Manganese-oxo Corroles"
- 8. Dr. Pinky Singh, 4.2011-4.2012: "Electron-rich Corroles"
- 9. Dr. Nickolay Semenishyn, 9.2011-3.2013: "Lanthanide Corroles"
- 10. Dr. Ali Amona, 1.2011 – 4. 2013: "Bioinorganic Chemistry of Amphipolar Corroles"
- 11. Dr. Gargi Dutta, 4.2012 – 5.2013: "Catalysis by Mn corroles"
- 12. Dr. Adi Haber, 4.2012-12.2013: "Medicinal Chemistry of Corroles" (Hershel & Hilda Rich Innovation Award 2013)"
- 15. Dr. Tridib Goswami, 11.2013-3.2015: "Corrole-based anticancer agents"
- 16. Dr. Susovan Bhowmik, 6.2014-6.2016 "Supramolecular Metallocorroles"

Presently

1. Dr. Irena Saltsman, 4.2000-; "Synthesis of Novel Corroles for Applications in Catalysis"
2. Dr. Atif Mahammed, 7.2000-; "Applications of Corrole Metal Complexes in Medicine and Energy Related Processes "
3. Dr. Amir Mizrahi, 7.2013 -: "Small Molecule Activation by Metalloporroles"
4. Dr. Kolanu Sudhakar, 9.2015- "Novel Photosensitizers"
5. Dr. Woormileela Sinha, 6.1016- "Superstructured Corroles for Catalysis"
6. Dr. Pinky Yahav, 3.2018, "Metalloporroles as Reduction Catalysts"

RESEARCH GRANTS

1. *Synthesis of New Porphyrin Derivatives.*
Grantor: The National Center for "Absorption in Science", Ministry of Immigrant Absorption.*
Period: 4/1995 - 4/1998; INS 90,000
Intended to support Dr. Irena Saltsman
2. *Electronic Structure and Reactivities of Oxidized Metalloporphyrins.*
Grantor: The United States-Israel Binational Science Foundation.*
Period: 9/1995 - 9/1998; \$ 112,000
Together with Prof. T. G. Spiro, Dept. of Chemistry, Princeton University, USA.
3. *New Approaches for the Preparation of Metalloporphyrins and for their Utilization.*
Grantor: The Israel Academy of Sciences and Humanities, Basic Research Foundation.
Period: 10/1995 - 10/1998; \$ 140,000
4. *New Pharmaceutical Applications of Porphyrin Derivatives.*
Grantor: Prochon Biotech Co. Ltd.
Period: 2/1996 - 2/1998; \$ 40,000.
5. *Porphyrins and Related Macrocycles as Growth Factor's Inhibitors.*
Grantor: Yeda Research and Development Co. Ltd.
Period: 2/1998 - 2/1999; \$ 20,000.
6. *Novel Corroles and their Utilization in Medical Applications.*
Grantor: The National Center for "Absorption in Science", Ministry of Immigrant Absorption.*
Period: 4/2000 - 3/2002 INS 140,000
Intended to support Dr. Irena Saltsman
7. *A New System to Synthesize Corroles - Potential Porphyrin Substitutes with Superior Implications in Medicine and Catalysis*
Grantor: The Mitchel Innovation Fund
Period: 6/2000 - 5/2001; \$ 20,000.
8. *Novel Catalysts for Aerobic Oxygenation and Asymmetric Synthesis*
Grantor: The Israel Science Foundation (Grant No. 368/00).
Period: 10/2000 - 9/2004; \$ 271,350.
9. *Catalysis by Novel Metal Corrole Complexes*

- Grantor: The Petroleum Research Foundation (PRF), USA.
Period: 4/2001 - 9/2003; \$ 60,000.
- 10.** *Equipment Fund for a 500 MHz NMR*
Grantor: The Israel Academy of Science*
Period: 10/2001 \$ 400,000.
Together with Prof. T. Baasov and I. Marek
- 11.** *Targeted Drug Delivery by a Combination of Engineered Adenoviruses and Corroles*
Grantor: The STAR Foundation (Chicago)
Period: 10/2002 - 9/2004 \$ 70,000.
- 12.** *Asymmetric Catalysis*
Grantor: German-Israeli Project Cooperation (DIP)*
Period: 1/2004 - 12/2008 EURO 201,600 (for ZG).
Together with Prof. E. Keinan and I. Marek (Technion) and W. Thiel (Mülheim, Germany)
- 13.** *Asymmetric Catalysis by Corrole Metal Complexes*
Grantor: The Israel Science Foundation
Period: 10/2004 - 9/2007 \$ 150,000.
- 14.** *Corrole-based Photovoltaic Cells*
Grantor: The United States-Israel Binational Science Foundation.*
Period: 10/2005 - 9/2009 \$ 128,000.
Together with Prof. H.B. Gray (Caltech-Pasadena, USA)
- 15.** *Time-Resolved EPR Spectroscopy of Photoexcited Metalloporroles and Porphyrin-Based Rotaxanes. A New Arena of Porphyrinoids*
Grantor: The Israel Science Foundation.*
Period: 10/2006 - 9/2009 \$ 36,000 (for ZG).
PI: Haim Levanon (HUJ), CI: Zeev Gross
- 16.** *Transferrin-conjugated Corroles for treating disadvantageous cell proliferation*
Grantor: The Gurwin Foundation
Period: 1/2007-1/2008 \$ 100,000
- 17.** *Equipment Fund for a 600 MHz NMR*
Grantor: The Israel Academy of Science (Converging Technologies)*
Period: 10/2007 NIS 2,902,500 (~ \$ 725,000).
Together with Prof. T. Baasov and M. Gandelman
- 18.** *Metalloporroles for protection of lipoproteins from modifications that might lead to atherosclerosis*
Grantor: The Israel Science Foundation
Period: 10/2008-9/2012 NIS 1,064,000 (~ \$ 320,000).
- 19.** *Light-driven electron and energy transfer in metalloporrole complexes: A combined femtosecond visible/IR and nanosecond EPR investigation*
Grantor: Deutsche Forschungsgemeinschaft (DFG).*
Period: 10/2008 - 4/2011 EUR 112,380 (for ZG).
Together with Prof. H. Levanon (Hebrew Univ.) and Prof. K. Heyne (Freie Universität Berlin)
- 20.** *Phosphorescent Corroles*
Grantor: The United States-Israel Binational Science Foundation.*
Period: 10/2009 - 9/2013 \$ 120,000.
Together with Prof. H.B. Gray (Caltech-Pasadena, USA)

21. *From pure chemistry to preclinical studies: Atherosclerosis and Cancer*
Grantor: The Herbert Irving Cancer and Atherosclerosis Research Fund
Period: 10/2009 - 9/2010 \$ 51,369.
22. *Metalloporphyrins for Treatment of Central Nervous System Diseases*
Grantor: Johnson & Johnson
Period: 6/2011 - 6/2012 \$ 50,000.
23. *Combating Cardiovascular Diseases by Metalloporphyrins*
Grantor: Kamin program, by the ministry of trading
Period: 12/2011 - 11/2012 NIS 394,400 (~ \$ 100,000).
24. *Tunable Chromophores for Dye Sensitized Solar Cells*
Grantor: Nevet grant - GTEP - RBNI
Period: 9/2011 - 9/2012 \$ 30,000.
25. *Combating Cardiovascular Diseases by Metalloporphyrins*
Grantor: Kamin program, by the ministry of trading, 2nd year
Period: 12/2012 - 11/2013 NIS 400,000 (~ \$ 100,000).
26. *Integrated System for Solar Production of Hydrogen and its Transformation into Liquid Fuel*
Grantor: GTEP
Period: 2/2013-1/2014, \$ 50,000
Co-PI: Avner Rothschild.
27. *Advanced Catalysis by Corrole Metal Complexes*
Grantor: The Israel Science Foundation
Period: 10/2013-9/2017 NIS 1,000,000 (~ \$ 280,000).
28. *Combating Cardiovascular Diseases by Metalloporphyrins*
Grantor: Kamin program, by the ministry of trading, 3rd year
Period: 12/2013 - 11/2014 NIS 400,000 (~ \$ 100,000).
29. *Non-platinum catalysts for oxygen reduction reaction at fuel cell cathodes*
Grantor: Manlam Fund
Period: 7/2014 -3/2015 \$ 15,000
30. *Expanded and Contracted Porphyrins for Stabilization and Activation of Metal Ions in High Oxidation States*
Grantor: The Pazy foundation
Period: 1/2015 -12/2018 NIS 438,000 for ZG)
Co-PI: Magal Saphier, Kamag
31. *Agents for Treating Delayed Effects of Acute Radiation Syndrome*
Grantor: Robert Shillman Fund for Global Security Technion North-Easton Partnership (Manlam)
Period: 3/2015 -2/2016 \$ 25,000
32. *Integrated Organic, Electrochemical and Cellular Approach for Studying the Inhibition of Deubiquitinases by Reactive Oxygen Species*
Grantor: Ministry of Science, Technology and Space (MOST)
Period: 15/12/2015 -14/12/2018 NIS 560,000 (for ZG)
Co-PI's: Ashraf Brik (Technion) and Doron Shabbat (TAU).
33. *First row transition metal complexes as catalysts for fuel cells*
Grantor: Ministry of Infrastructure, Energy, and Water
Period: 1/2016 - 12/2018 NIS 380,000 (for ZG)
Co-PI: Lior Elbaz, Bar Ilan University
34. *Member of the National Research Center for Electrochemical Propulsion, INREP 2*

Grantor: ISF-ICORE

Period: 1/2017 – 12/2022 NIS 1,000,000 (for ZG)

Multiple Co-PI's: 9 from Bar Ilan University, 5 from the Technion, 5 from Tel Aviv University, 1 from Ariel University, 1 from the Weizmann institute.

- 35.** *Metallocorroles for imaging and therapy in malignant melanoma*
 Grantor: the Jacki and Bruce Barron Cancer Research Scholars' Program, a partnership between ICRF and City of Hope
 Period: 9/2017 – 8/2018 \$ 75,000 (for ZG)
 Co-PI: John Termini, City of Hope.
- 36.** *Theranostic metallodrugs for imaging and fighting cancer*, Funding of a 6 months sabbatical at the City of Hope
 Grantor: the Jacki and Bruce Barron Cancer Research Scholars' Program, a partnership between ICRF and City of Hope
 Period: 3/2018 – 8/2018 \$ 60,000
 Hosting scientist: John Termini, City of Hope.
- 37.** *Inorganic Catalysis for Solving Global Challenging Problems*
 Grantor: The Israel Science Foundation
 Period: 10/2017-9/2021 NIS 1,200,000 (~ \$ 330,000)
- 38.** *"Earth abundant metal complexes with unique and tunable photophysical properties"*
 Grantor: Joint NSFC-ISF Research Grant.
 Period: 10/2017-9/2020. NIS 310,000/y for 3 years.
 1 time grant for equipment: NIS 180,000
 Co-PI: Prof. Zhao Jianzhang, Dalian University of Technology.
 Grant Number: 2535/17
- 39.** *Corrole Nanoconjugates for Cancer Imaging and Therapy*
 Grantor: Kamin program, by the ministry of trading, 1st year
 Period: 9/2018 - 9/2019 NIS 440,000 (~ \$ 122,000).
- 40.** *Corroles and Subphthalocyanines for Organic Photovoltaics (OPVs)*
 Grantor: Lyon Sachs Foundation
 Period: 9/2017 - 8/2019 \$ 300,000.
- 41.** *Treating Delayed Effects of Acute Radiation Syndrome*
 Grantor: Technion Fund for National Security
 Period: 4/2019 - 3/2020 NIS 90,000.

PENDING

SIGNIFICANT PROFESSIONAL PROJECTS

1.2012- present: Organizer & head of the youth outreach activities listed below:

Academic head of Archimedes: The integration of high school pupils in Academic Chemistry studies

Academic head of Chimiada: The national competition in Chemistry for high school pupils.

Head of the national team to the International Olympiad in Chemistry that took place in:

Washington DC-USA (July 21-30, 2012)

Moscow-Russia (July 15-23, 2013)

Hanoi-Vietnam (July 20-29, 2014)

Baku-Azerbaijan (July 20-29, 2015)

Tbilisi-Georgia (July 23-August 1, 2016)

Bangkok-Thailand (July 6-15, 2017)

Bratislava-Slovakia and Prague-Czech Republic (2018).

PUBLICATIONS

Original Articles

Zeev Gross, List of Publications and Patents

1. S. Hoz, Z. Gross and D. Cohen; " π Nucleophilicity: The Effect of Charge Delocalization on the Efficiency of Internal Displacements in E1cB Reactions." *J. Org. Chem.* **1985**, *50*, 832 - 836.
2. S. Hoz, Z. Gross and D. Speizman; "Nucleophilic Attacks on LL (Low LUMO) Substrates. Part 3. Molecular Stacking of 9-methylenefluorene Derivatives as a Source of Zero-order Reactions." *J. Chem. Soc., Perkin Trans. 2* **1985**, 1143 - 1146.
3. Z. Gross and S. Hoz; "Radical-anionic Nature of the Transition State in the Michael Addition Reaction." *J. Am. Chem. Soc.* **1988**, *110*, 7489 - 7493.
4. Z. Gross and S. Hoz; "Curve Crossing Analysis and Rate - ^{13}C Chemical Shift Correlation in Michael Reaction." *Tetrahedron Lett.* **1991**, *32*, 5163 - 5166.
5. Z. Gross and S. Hoz; "Curve Crossing Analysis of LFER Data in Michael Addition Reactions." *Can. J. Chem.* **1992**, *70*, 1022 - 1027.
6. Z. Gross and C. Barzilay; "Spectroscopic Characterization of Two Types of Tetraarylporphyrin Cation Radicals." *Angew. Chem. Int. Ed. Eng.* **1992**, *31*, 1615 - 1617. *Angew. Chem.* **1992**, *104*, 1672 - 1674.
7. Z. Gross and S. Nimri; "A Pronounced Axial Ligand Effect on the Reactivity of Oxoiron(IV) Porphyrin Cation Radicals." *Inorg. Chem.* **1994**, *33*, 1731-2.
8. J. T. Groves, Z. Gross and M. K. Stern; "Preparation and Reactivity of Oxoiron(IV) Porphyrins." *Inorg. Chem.* **1994**, *33*, 5065 - 5072.
9. Z. Gross and I. Toledano; "Preparation of Bis-Pocket Porphyrins with Carboxylic Acid Synthons." *J. Org. Chem.* **1994**, *59*, 8312-5.
10. C. M. Barzilay, S. A. Sibia, T. G. Spiro, and Z. Gross; "Elucidation of Factors Affecting the Electronic Structures of Magnesium(II) and Zinc(II) Tetraarylporphyrin Cation Radicals" *Chem. Eur. J.* **1995**, *1*, 222-231.
11. J. T. Groves and Z. Gross; "On the Mechanism of Epoxidation and Hydroxylation Catalyzed by Iron Porphyrins. Evidence for Non-Intersecting Reaction Pathways", *Bioinorganic Chemistry*:

An Inorganic Perspective of Life, D. P. Kessissoglou, Ed., Kluwer Academic Publishers, Dordrecht, NATO ASI Series, Vol. 459, **1995**, 39-47.

12. Z. Gross and C. M. Barzilay; "A Novel Facile Synthesis of Dihalogenoruthenium(IV) Porphyrins" *J. Chem. Soc., Chem. Commun.* **1995**, 1287-8.
13. Z. Gross and L. Kaustov; "New Efficient Routes for the Preparation of Deuterated Tetraarylporphyrins" *Tetrahedron Lett.* **1995**, 36, 3735-6.
14. Z. Gross and S. Nimri; "Seeing the Long Sought Intermediate in the Reaction of Oxoiron(IV) Porphyrin Cation Radicals with Olefins" *J. Am. Chem. Soc.* **1995**, 117, 8021-2.
15. C. M. Barzilay, S. A. Sibia, T. G. Spiro, and Z. Gross; "Tuning the Intramolecular Spin Coupling in Metalloporphyrin Cation Radicals" *J. Inorg. Biochem.* **1995**, 59, 517.
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15. A. Segev, D. Aviezer, Z. Gross, and A. Yayon; "Inhibition of Vascular Smooth Cell Proliferation by a Novel Fibroblast Growth Factor Receptor Antagonists." 70th Am. Heart Assoc. **1998**, A104549.
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17. J. Y. Hwang, H. Agadjanian, L. K. Medina-Kauwe, Z. Gross, H. B. Gray, K. Sorasaene, and D. L. Farkas "Large Field of View Scanning Fluorescence Lifetime Imaging System for Multimode Optical Imaging of Small Animals" *Proc. SPIE* **2008**, 6859, 68590G (8 pages, DOI:10.1117/12.769305).

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11. D. Aviezer, A. Yayon, Z. Gross (Yeda Res & Dev and Technion Res & Dev Foundation); "Pharmaceutical Compositions Comprising Porphyrins and some Novel Porphyrin Derivatives", **Priority date:** November 8, 1999, International Publication Date: 18.5.2000 (WO 00/27379). **Approved as US 6,730,666, May 4 2004.**
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- 14.** Z. Okun, A. Mahammed, S. Mandel, M. Youdim, and Z. Gross "Corroles for Neuroprotection and Neurorescue" **Priority date:** January 31, 2008. **Approved as EP2244701** on May 9, 2012. (U.S. Application Number 61025043), Publication number: WO/2009/095923 (A2). US 2011/0098262 A1 *published on 28-Apr-2011*. The US patent has been shortened and contains claims only about diabetes. The latest reply to the examiners is about to be submitted in December 2016.
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- 16.** Z. Gross, M. Aviram, A. Haber (Technion Res & Dev Foundation); "Combinations of Corroles and Statins", submitted on August 15, 2011. US application number 61523476, WO 2013024425 A1 and US 20140200204 A1. **Approved as US 9,642,86**, on May 9, 2017. **Priority Date:** August 15, 2011
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3. Z. Gross; *Inorganic Reaction Mechanisms*, Le Bischenberg, France, January 4-6, 1996. "Reaction Profile of the Last Step in Epoxidation of Olefins by Model Complexes of Cytochrome P-450."
4. Z. Gross, S. Nimri, L. Simkhovich, C. M. Barzilay; *3rd European Conference on Bioinorganic Chemistry (EUROBIC 3)*, Noordwijkerhout, The Netherlands, August 4-10, 1996. "Reaction Profile of the Last Step in Epoxidation of Olefins by Model Complexes of Cytochrome P-450." (**Plenary Lecture**)
5. S. Ini and Z. Gross; *The Israel Chemical Society 62nd Annual Meeting*, The Technion, Haifa, Israel: 3-5 February, 1997. "Bioinspired Catalysis: Enantioselective Epoxidation of Unactivated Olefins."
6. Z. Gross; *10th International Conference on Cytochrome P-450: Biochemistry, Biophysics, and Molecular Biology*, San Francisco, USA, August 21-26, 1997. "Thermodynamic and Kinetic Effects of Axial Ligands in Compound I Analogues of Cytochrome P-450."
7. Z. Gross; *Chemical, Structural, and Biomedical Applications of Supramolecular Systems*, Tel-Aviv, Israel: 3-7 January, 1998. "Self Assembly and Molecular Recognition in the Synthesis and Reactivity of Chiral Metalloporphyrins."
8. Z. Gross; *The Israel Chemical Society 63rd Annual Meeting*, Tel-Aviv, Israel: 9-11 February, 1998. "Models of Cytochrome P-450: From Mechanistic Investigations to Catalytic Chiral Induction."
9. Z. Gross and S. Ini; *Binational Italian-Israeli Conference on Physical Organic Chemistry*, Kibbutz Maale Hachamisha, Israel: 14-16 June, 1998. "Mechanistic Investigation of the Ruthenium Porphyrin Catalyzed Enantioselective Epoxidation of Olefins by Pyridine *N*-oxides."
10. Z. Gross, S. Ini, L. Simkhovich, N. Galili, and I. Saltsman; *Binational Israel-Japan Symposium on Design of Functional Supramolecular Materials and their Applications*, Jerusalem, Israel: 1-2 February, 1999. "Metal Complexes of Chiral Porphyrins and Related Macrocycles."
11. Z. Gross, N. Galili, L. Simkhovich, and G. Golubkov; *The Israel Chemical Society 64th Annual Meeting*, Bar-Ilan University, Ramat Gan, February 16, 1999. "Metal Complexes of Corroles as Catalysts for Activation of Hydrocarbons." (**Keynote Lecture**)
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13. Z. Gross; *The 7th International Symposium on the Activation of Dioxygen and Homogeneous Catalytic Oxidation (ADHOC-99)*, York, England, July 19-23, 1999. "Asymmetric Activation of Hydrocarbons by Metal Complexes of Porphyrins and Related Macrocycles."
14. Z. Gross; *1st French-Israeli Workshop on Catalysis*, Paris, France, December 20-22, 1999. "Catalysis by Corrole Metal Complexes."
15. Z. Gross; *The Israel Chemical Society 65th Annual Meeting*, Beer-Sheva, Israel: 8-9 February, 2000. "Stabilization of High-Valent Metals, including Oxo-metal Species, by Corroles."
16. Z. Gross; *The 1st International Conference on Porphyrins and Phthalocyanines*, Dyon, France, June 25-30, 2000. "Corroles, Ligands of the Future: Oxo-metal Complexes, Chiral Derivatives, and Catalysis"
17. Z. Gross; *The 6th European Mediterranean Conference in Inorganic Chemistry (FIGIPS VI)*, Barcelona-Spain, July 15-20, 2001. "Catalysis by Metal Corroles and some Mechanistic Puzzles"
18. Z. Gross; *The Tenth International Conference on Bioinorganic Chemistry (ICBIC X)*, Florence, Italy, August 26-31, 2001. "High-Valent Metal Corroles: Stability, Reactivity, and Catalysis"
19. Z. Gross; *The Binational Israel – Japan Symposium on Supramolecular Chemistry and Advanced Materials*, Osaka – Japan, October 14–19, 2001. "Novel Amphiphilic Corroles and Complexes with Planar-Chirality for Applications in Medicine and Catalysis"
20. Z. Gross; *The Israel Chemical Society 67th Annual Meeting*, Jerusalem, Israel: 29-30 January, 2002. "Amphiphilic Corroles and their Interactions with Biological Molecules."
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24. Z. Gross; *The Israel Chemical Society 69th Annual Meeting*, Tel Aviv, Israel: 2-3 February, 2004. "Bioconjugated Corroles for Medicinal Applications and Enzyme-like Catalysis "

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30. Z. Gross; *The Israel Chemical Society 71th Annual Meeting*, Tel Aviv, Israel: 15-16 February, 2006. "Catalytic NH Activation by Porphyrin Metal Complexes."
31. Z. Gross; *The 4th International Conference on Porphyrins and Phthalocyanines*, Rome, Italy: 2-7 July 2006. "How do the readily oxidized porphyrins stabilize high valent metals?"
32. Z. Gross and A. Mahammed; *232nd National Meeting of the American Chemical Society*, San Francisco, California-USA, September 10 –14, 2006. "Porphyrin Metal Complexes as very Efficient Catalysts for Decomposition of Reactive Oxygen Species"
33. Z. Gross and A. Mahammed; *9th International Symposium on Applied Bioinorganic Chemistry (ISABC9)*, Napoli-Italy, December 2 –5, 2006. "Safe and fast catalytic decomposition of reactive oxygen species by porphyrin metal complexes"
34. Z. Gross, A. Mahammed, A. Haber, and Z. Gershman; *1st International Symposium on Applied Bioinorganic Chemistry (ISABC9)*, Parry Sound, Ontario-Canada, May 22 –25, 2007. "Safe and fast catalytic decomposition of reactive oxygen and nitrogen species by porphyrin metal complexes"
35. A. Mahammed, I. Aviv, A. Haber, and Z. Gross; *90th Canadian Chemistry Conference*, Winnipeg, Manitoba-Canada, May 26 –30, 2007. "The potency of porphyrin metal complexes in catalysis, medicine, and photovoltaic cells"

36. A. Mahammed, A. Haber, and Z. Gross; *9th FIGIPAS Meeting in Inorganic Chemistry*, Vienna-Austria, July 4-7, 2007. "Combating reactive oxygen species by corrole metal complexes"
37. Z. Gross; The 213th Electrochemical Society Meeting (ECS), Phoenix, AZ, May 18-22, 2008. "Tuning Redox Potentials of Corrole Metal Complexes and their Catalytic Activity Regarding Decomposition of Reactive Oxygen Species"
38. Z. Gross; *The 5th International Conference on Porphyrins and Phthalocyanines*, Moscow-Russia, July 13-18, 2008. "Advances in Corrole-based Applications"
39. Z. Gross; *3rd Joint International Symposium on Macrocyclic & Supramolecular Chemistry (ISMCS-III)*, Las Vegas, Nevada (USA), July 13-18, 2008. "Corrole Metal Complexes in Catalysis, Medicine, and Photovoltaic Cells"
40. Z. Gross; *The Israel Chemical Society 74th Annual Meeting*, Tel Aviv, Israel: 8-9 February, 2009. "Novel Catalysts for Decomposition of Reactive Oxygen and Nitrogen Species: From Fundamental Chemistry to Preclinical Investigations." (**Plenary Lecture**)
41. Z. Gross; *The 215th Electrochemical Society Meeting (ECS)*, San Francisco, CA, May 24-29, 2009. "Iridium(III) Corroles: From Fundamental Investigations of their Chemical and Physical Properties to their Utilization in Advanced Applications"
42. Z. Gross; *2nd Georgian Bay International Conference on Bioinorganic Chemistry*, Parry Sound, Ontario-Canada, May 26 -29, 2009. "Preclinical Investigations of Corrole Metal Complexes"
43. Z. Gross; *International Conference on Polymers and Advanced Materials POLYMAT-2009*, November 22-26, 2009, Huatulco, Mexico. "Covalent versus non-covalent approaches for asymmetric catalysis by corrole metal complexes"
44. Z. Gross; *The 217th Electrochemical Society Meeting (ECS)*, Vancouver, Canada, April 25-30, 2010. "Catalytic Decomposition of Reactive Oxygen and Nitrogen Species by Corrole metal complexes"
45. Z. Gross; *The 6th International Conference on Porphyrins and Phthalocyanines*, New Mexico-USA, July 4-9, 2010. "Corroles: The Journey from Synthesis, Coordination Chemistry, Photophysics, and Catalysis to Medicinal Applications" (**Plenary Lecture**).
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47. Z. Gross; The Tetrapyrrole Discussion Group Meeting, Berlin-Germany, September 13-14, 2010. "Serum distribution, cellular and organ imaging, and therapeutic utility of metalloporphyrins"
48. Z. Gross; *5th Asian Biological Inorganic Chemistry Conference*, Kaohsiung, Taiwan, November 2-5, 2010. "Imaging organ and cellular uptake of metalloporphyrins used for tumor elimination and for attenuation of atherosclerosis, diabetes, and neurodegenerative diseases"
49. Z. Gross; *The Israel Chemical Society 76th Annual Meeting*, Tel Aviv, Israel: 9-10 February, 2011. "Redox active metalloporphyrins for catalytic decomposition of cytotoxic oxygen and nitrogen species"
50. A. Mahammed, I. Saltsman, A. Haber, Z. Okun, and Z. Gross; *The 217th Electrochemical Society Meeting (ECS)*, Montreal, Canada, May 1-6, 2011. "Catalytic Decomposition of Reactive Oxygen and Nitrogen Species by Porphyrin metal complexes"
51. Z. Gross; *3rd Georgian Bay International Conference on Bioinorganic Chemistry*, Parry Sound, Canada, May 31-June 4, 2011. "Metalloporphyrins: Preclinical Investigations on Cancer, Atherosclerosis, and Neurodegenerative Diseases"
52. Z. Gross; *3rd Asian Conference on Coordination Chemistry (ACCC-3)*, New Delhi, India October 17-20, 2011. "Utilizing Photophysical and Catalytic Properties of Metalloporphyrins for Medicinal Applications" (**Keynote Lecture**)
53. Z. Gross; *Science for Future Molecular Systems*, Fukuoka-Japan, November 25-26 2011. "Tuning the Photophysical and Catalytic Properties of Metalloporphyrins for Medicinal Applications" (**Foreign Speaker**).
54. Z. Gross; *The Israel Chemical Society 77th Annual Meeting*, Ramat Gan, Israel: February 7-8, 2012. "Redox active metalloporphyrins for catalytic decomposition of cytotoxic oxygen and nitrogen species" (**Keynote Lecture**)
55. Z. Gross; *The 7th International Conference on Porphyrins and Phthalocyanines*, Jeju-S. Korea, July 1-6, 2012. "Peroxidase & Catalase Activities of Bioconjugated Metalloporphyrins"
56. Z. Gross; *The 4th Congress of the European Association for Chemical and Molecular Sciences (EuChemS)*, Prague, Czech Republic: August 26-30 2012. "Controlling and utilizing the catalytic pro- and anti-oxidant properties of porphyrin metal complexes" (**Keynote Lecture**, in the Symposium on New Trends in Organometallics)
57. Z. Gross; *The 10th International Symposium on the Activation of Dioxygen & Homogeneous Catalytic Oxidation (ADHOC-2012)*, Ramat Rachel, Israel, September 2-7, 2012. "Controlling and utilizing the catalytic pro- and anti-oxidant properties of porphyrin metal complexes" (**Keynote Lecture**)

58. Z. Gross; *6th Asian Biological Inorganic Chemistry Conference*, Hong Kong, China, November 5-8, 2012. "Catalytic Antioxidants for treatment of Diseases and their complications" (**Keynote Lecture**)
59. Z. Gross; *Gordon Research Conference on "Inorganic Reaction Mechanisms"*, Galveston, Texas-USA, March 3-8, 2013. "From Small Molecule Deactivation to Medicinal Chemistry"
60. Z. Gross, A. Haber, A. Abu-Younis Ali, and A. Mahammed; *2nd EuCheMS Inorganic Chemistry Division Meeting*, Jerusalem, July 7-11, 2013. Cholesterol-Lowering by Metalloporphyrin/Statin Combination Therapy (**Keynote Lecture**)
61. Z. Gross; *The Israel Chemical Society 79th Annual Meeting*, Tel Aviv, Israel: February 7-8, 2014 "Corroles: From Fundamental Science to Drug Candidates and Water Splitting Catalysts" (**Plenary Award Lecture**)
62. Z. Gross, *European Symposium on Current Challenges in Supramolecular Artificial Photosynthesis* " Jena, March 12-13, 2014. "Corroles: From Fundamental Science towards Water Splitting Catalysts"
63. A. Mahammed, B. Mondal, A. Rana, A. Dey, and Z. Gross; *The 225th Electrochemical Society Meeting (ECS)*, Orlando, Florida-USA, May 11-15 2014, "Cobalt Corrole Catalyzed Hydrogen Evolution Reaction: Surprising Electronic Effects and Characterization of Key Reaction Intermediates"
64. Z. Gross; *14th International Conference on Oxidative Stress Reduction, Redox States & Antioxidants*, Paris-France, June 12-13 2014, "Catalytic Antioxidant Therapy and Beyond: Recent Advances by Macrocyclic Metal Complexes"
65. Z. Gross; *NYU-Technion Retreat*, NYU Langone Medical Center, NY-USA, Sept. 3-4, 2014. "Metalloporphyrins for combating cancer and metabolic syndromes"
66. Z. Gross; *1st Sino-Israel Bilateral Workshop & International Symposium on Organometallics and Homogeneous Catalysis*, Beijing - China, September 7-9, 2014. "Catalytic Activation of Small Molecules/Ions by Corrole Metal Complexes"
67. Z. Gross; **Xingda Lecture** at *Peking University*, Beijing - China, September 19, 2015. "Metalloporphyrins as Catalysts for Health and Energy Related Processes"
68. Z. Gross; *5th Georgian Bay International Conference on Bioinorganic Chemistry*, Parry Sound, Canada, May 19-23 2015. "Catalytic Antioxidant Therapy by Metallodrugs: Lessons from Metalloporphyrins"
69. Z. Gross and A. Mahammed; *The 227th Electrochemical Society Meeting (ECS)*, Chicago-USA, May 24-28 2015, "New Catalysts for the Hydrogen and Oxygen Evolution Reactions"

70. Z. Gross; *3rd EuCheMS Inorganic Chemistry Division Meeting*, Wrocław, Poland, June 28 - July 1, 2015. "Redox Active Metallodrugs: Benefits and Concerns" (**Plenary Lecture**)
71. Z. Gross; *The Israel Chemical Society 81st Annual Meeting*, Tel Aviv, Israel: February 9-10, 2016 "Sustainable Metal Catalyst for Energy-Relevant Processes" (**Keynote Lecture**)
72. Z. Gross; *251st ACS National Meeting & Exposition*, San Diego, California-USA March 13-17, 2016 "Bioconjugated metallocorroles, for medicine and catalysis"
73. Z. Gross; *COST Meeting*, Tarragona-Spain: April 13-5, 2016 "Catalysts for proton reduction and photocatalysis"
74. Z. Gross; *The 9th International Conference on Porphyrins and Phthalocyanines*, Nanjing-China, July 3-8, 2016, "Tumor detection and elimination by targeted corrole metal complexes"
75. Z. Gross; *COST Meeting*, Milazzo-Italy: September 4-6, 2016 "Outline of all the electro- and photocatalytic reactions developed during the duration of the COST action, with first row transition metal corroles"
76. Z. Gross; *Athens International Catalysis Symposium*, Athens-Greece, November 3-4 2016 "1st Row Metallocorroles for Electro- and Photocatalysis" (**Keynote Lecture**).
77. Z. Gross; *Frontiers of Molecular Design: Synthesis and Catalysis*, Technion-Israel, November 15-16 2016 "1st Row Metallocorroles for Electro- and Photo-catalysis".
78. Z. Gross; *5th Symposium on the Advances in Bioinorganic Chemistry*, Kolkata-India: January 7-11 2017 "Tumor detection & elimination by targeted corrole metal complexes" (**Keynote Lecture**).
79. Z. Gross; *5th Symposium on the Advances in Bioinorganic Chemistry*, Kolkata-India: January 7-11 2017 "Recruiting the Reducing Power of Metallocorroles for Catalyzing Energy Relevant Processes".
80. Z. Gross; *6th Georgian Bay International Conference on Bioinorganic Chemistry*, Parry Sound, Canada, May 23-27 2017. "Design and Synthesis of Metallocorroles for Catalyzing Energy Relevant Processes"
81. Z. Gross; *The 231th Electrochemical Society Meeting (ECS)*, New Orleans-USA, May 28- June 22, 2017. "Earth Abundant Metal Corroles as Catalysts for Energy Relevant Processes"
82. A. Mahammed and Z. Gross; *22nd International Symposium on Photochemistry of Coordination Compounds*, Oxford-UK, July 9-14, "Metallocorroles for Photocatalysis" (presented by A. Mahammed)

83. Zeev Gross; *Modern Trends in Inorganic Chemistry (MTIC)- XVII*, Pune-India, December 11-14, 2017. "Hypothesis-Driven Design of Corrole Metal Complexes as Catalysts for Energy Relevant Processes" (**Plenary Lecture**).
84. Zeev Gross; *Conference on new advances in the chemistry of porphyrinoids*, Warsaw-Poland, June 29-30, 2018, "Cobalt Corroles for Catalyzing Energy Relevant Processes"
85. Zeev Gross; *The 10th International Conference on Porphyrins and Phthalocyanines*, Munich-Germany, July 1-6, 2018 "20 Years of Triarylcorroles and New Horizons" (**Career Award Lecture**)
86. Zeev Gross; *13th International Symposium on Macrocyclic and Supramolecular Chemistry (ISMCS-13)*, July 8-13, 2018, Quebec City, Canada "Tuning the Photophysical and Chemical Properties of Metalloporroles"

Contributed Lectures

87. E. Keinan, E. Benory, B. S. Green and Z. Gross; The Israel Chemical Society 57th Annual Meeting, Technion, Haifa, February 12-13, 1992. "Anti-Metalloporphyrin Antibodies as Hemoprotein Analogs."
88. Z. Gross and S. Nimri; 9th International Symposium on Homogeneous Catalysis, Jerusalem, Israel, August 1994. "Mimicking the Axial Ligand Effect on the Oxygenation Reactivity of Hemoproteins by Model Compounds."
89. Z. Gross and S. Nimri; The Israel Chemical Society 61st Annual Meeting, The Hebrew University, Jerusalem, February 1996. "Reaction Profile of the Last Step in Epoxidation of Olefins by Model Complexes of Cytochrome P-450."
90. S. Nimri, L. Simkhovich and Z. Gross; 6th International Symposium on the Activation of Dioxygen and Homogeneous Catalytic Oxidation, Noordwijkerhout, The Netherlands, April 14-19, 1996. "Ozone as Primary Oxidant in Iron(III) Porphyrin Catalyzed Hydroxylation of Hydrocarbons."
91. S. Ini and Z. Gross; 3rd European Conference on Bioinorganic Chemistry (EUROBIC 3), Noordwijkerhout, The Netherlands, August 4-10, 1996. "Novel Metal and Solvent Effects on Catalytic Oxidation of Hydrocarbons by Chiral Metalloporphyrins." (Lecture presented by graduate student S. Ini)
92. Z. Gross, C. M. Barzilay, A. Mahammed; 31st International Conference on Coordination Chemistry (ICCC-31), Vancouver, Canada, August 18-23 1996. "Novel Tri- and Tetravalent Ruthenium and Osmium Porphyrin Complexes and Mechanism of their Formation from the Metal(II) Carbonyls"
93. Z. Gross and S. Ini; XIIth FEICHEM Conference on Organometallic Chemistry, Prague, Czech Republic, August 31-September 5, 1997. "Novel

Effects of Metal, Solvent, and Oxidant on Metalloporphyrin Catalyzed Epoxidation of Olefins."

- 94.** Z. Gross and S. Ini; 11th International Symposium on Homogeneous Catalysis, St. Andrews, Scotland, July 12-17, 1998. "Ruthenium Porphyrin Catalyzed Enantioselective Epoxidation of Olefins by Pyridine N-oxides."
- 95.** Z. Gross and A. Mahammed; 227th National Meeting of the American Chemical Society, Anaheim, California-USA, March 28 – April 1, 2004. "Enzyme-like catalysis by bioconjugated corrole metal complexes."
- 96.** Z. Gross; 14th International Symposium on Homogeneous Catalysis (ISHC-14), Munich, July 5 - 9, 2004. "Asymmetric Catalysis by Corrole Metal Complexes and their Non-covalent Conjugates with Proteins"
- 97.** Z. Gross; 36th International Conference on Coordination Chemistry (ICCC-36), Merida, Mexico, July 18-23 2004. "Albumin Conjugated Corroles: Extremely Simple, yet very Efficient Biomimetic Catalysts for Asymmetric Oxidations"
- 98.** A. Mahammed, G. Golubkov, and Z. Gross; 9th International Symposium Activation of Dioxygen and Homogeneous Catalytic Oxidation, Cologne, Germany July 25-29, 2005. "Stoichiometric, Catalytic, and Enantioselective Oxygen Atom Transfer Reactions by Manganese Corroles"
- 99.** G. Golubkov, A. Mahammed, L. Simkhovich, and Z. Gross; Pacifichem 2005 (Symposium Title: Atom Transfer, Small Molecule Activation, and Metal-ligand Multiple Bonds), Honolulu, Hawai, USA, December 15-20, 2005, "Nitrogen Atom Transfer Reactions between Isolated (Nitrido)metal Complexes"
- 100.** Z. Gross and A. Mahammed; 37th International Conference of Coordination Chemistry (ICCC-37), Cape Town, South Africa, August 13-18, 2006 "Amphiphilic Corrole Metal Complexes are very Efficient Catalysts for Selective Decomposition of Reactive Oxygen Species"
- 101.** A. Haber, M. Aviram, and Z. Gross; 10th European Conference on Bioinorganic Chemistry (EUROBIC 10), Thessaloniki, Greece, June 22-26, 2010. "Corrole-conjugated HDL particles are resistant to function damaging oxidative stress." Lecture presented by graduate student Adi Haber.
- 102.** Z. Gross; Medicinal Redox Inorganic Chemistry, Erlangen—Germany, July 20-22 2013. "*Corrole Metal Complexes: From pure science to preclinical investigations*"
- 103.** Z. Gross and A. Mahammed; *The 227th Electrochemical Society Meeting (ECS)*, Chicago-USA, May 24-28 2015, "Electro- and Photo-Catalytic Reduction of Small Molecules/Ions By Corrole Metal Complexes".

104.Z. Gross; 3rd European Colloquium on Inorganic Reaction Mechanisms (*ECIRM*), Krakow-Poland, June 21-26, 2016 “Tuning the Properties of 1st Row Metalloporphyrins for Electro- and Photo-catalysis”