Date: May 9, 2016

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

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
- Member of the Senate committee for the Harvey prize, 2015 & 2017 (Chairman)
- Dean of External and Continuing Studies, 1.2015-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 Marcrocyclic Metal Complexes*", Technion, June 29 - July 1, 2014.
- Organizer and Chairman of the Schulich Winter School on "*Frontiers in Inorganic Chemistry*", honoring Prf. 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.

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 Lecture, California Institute of Technology, 9/2017

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

JSPS fellowship, 1/2018

Hans Fischer career award 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 Apllications 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 Metallocorroles”. (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; “Metallocorroles for Attenuation of Atherosclerosis” [Sherman interdisciplinary Scholarship (2004); Gutwirth Scholarship (2005); Sego prize (2006); Fine Scholarship (2007); Jacobs Scholarship (2009); Horev prize in medicnal chemistry (2011); Springer Thesis Prize for outstanding PhD research (2012)]. Additional supervisor: Michael Aviram, Faculty of Medicine.

29. Zoya Okun, Ph.D. 7/2012; “Metallocorroles for Therapeutic and Related Applications” (Faculty Excellence Scholarship, 2010, Sego 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 Nigel-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)

Theses in Progress

36. Matan Solliway, Ph.D. candidate, 3.2014-

37. Anh Le, M.Sc. candidate, 10.2014-

38. Lena Landau, M.Sc. candidate; 3.2015-

39. Qiucheng Chen, M.Sc. candidate, 10.2016-

40. Peter Teplitzki, M.Sc. candidate, part time from 10.2016

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, “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 Metallocorroles”

4. Dr. Sudhakar Kolanu, 9.2015- “Novel Photosensitizers”

5. Dr. Woormileela Sinha, 6.1016- “Superstructured Corroles for Catalysis”

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 Growths 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 Metallocorroles 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. *Metallocorroles 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 metallocorrole complexes: A combined femtosecond visible/IR and nanosecond EPR investigation*
Grantor: Deutsche Forschunggemeinschaft (DFG).*
Period: 10/2008 - 4/2011 EUR 112,380 (for ZG).
Together with Prof. H. Levanon (Hebrew Univ.) and Prof. K. Heyne (Freie Universitat 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. *Metallocorroles for Treatment of Central Nervous System Diseases*
Grantor: Johnson & Johnson
Period: 6/2011 - 6/2012 $ 50,000.

23. *Combating Cardiovascular Diseases by Metallocorroles*
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 Metallocorroles*
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 Metallocorroles*
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)

PENDING

38. *"Metallocorrole-Protein Nanocages for Bioimaging and Therapy"*, submitted to the BSF (11/2016 $ 200,000, with HB Gray and T. Termini). Not funded, June 26, 2017

39. *"Agents for Treating Delayed Effects of Acute Radiation Syndrome",* submitted to the Health Ministry and IDF, on 11/2016. Total requested sum is NIS 166,500 (for 18 months, and most of it is for syntheses and manpower for the syntheses). Not funded

40. "*Earth abundant metal complexes with unique and tunable photophysical properties*", submitted to the Joint NSFC-ISF Research Grant, on January 4 2017. Request is for NIS 370,000/y for 3 years. Submitted together with Prof. Zhao Jianzhang from Dalian University of Technology.

41. *"Visible light and non-precious metal photocatalyzed (het)aryl-(het)aryl sp^2C–sp^2C bond assembling for efficient synthesis of polycyclic (hetero)aromatics'*, submitted to the Ministry of Science, Technology and Space, together with Prof. Arie-Lev Gruzman from Bar Ilan University on 15/12/2017. Not funded, June 29, 2017

SIGNIFICANT PROFESSIONAL PROJECTS

1.2012- present: Academic head of Archimedes- The integration of high school pupils in Academic Chemistry studies

1.2012-present: Academic head of Chimiada- The National Olympiad in Chemistry for high school pupils.

7.2012: Head of the national team to the International Olympiad in Chemistry that took place in Washington DC-USA during July 21-30.

7.2013: Head of the national team to the International Olympiad in Chemistry that took place in Moscow-Russia during July 15-23.

7.2014: Head of the national team to the International Olympiad in Chemistry that took place in Hanoi-Vietnam during July 20-29.

7.2015: Head of the national team to the International Olympiad in Chemistry that took place in Baku-Azerbaijan during July 20-29.

7.2016: Head of the national team to the International Olympiad in Chemistry that took place in Tbilisi-Georgia during July 23-August 1.

PUBLICATIONS

Original Articles

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. Sibilia, 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*, 312-321.

11. Z. Gross and C. M. Barzilay; "A Novel Facile Synthesis of Dihalogenoruthenium(IV) Porphyrins" *J. Chem. Soc., Chem. Commun.* **1995**, 1287-8.

12. Z. Gross and L. Kaustov; "New Efficient Routes for the Preparation of Deuterated Tetraarylporphyrins" *Tetrahedron Lett.* **1995**, *36*, 3735-6.

13. 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.

14. S. Ini, M. Kapon, S. Cohen, and Z. Gross; "Self Assembly Assisted Preparation of a Homochiral Porphyrin" *Tetrahedron: Asymmetry* **1996**, *7*, 659-62.

15. K. Czarnecki, S. Nimri, Z. Gross, L. M. Proniewicz, and J. R. Kincaid; "Direct Resonance Raman Evidence for a Trans Influence on the Ferryl Fragment in Models of Compound I Intermediates of Heme Enzymes" *J. Am. Chem. Soc.* **1996**, *118*, 2929-35.

16. Z. Gross, S. Ini, M. Kapon, and S. Cohen; "First Utilization of a Homochiral Ruthenium Porphyrin as Enantioselective Epoxidation Catalyst" *Tetrahedron Lett.* **1996**, *37*, 7325-8.

17. Z. Gross; "The Effect of Axial Ligands on the Reactivity and Stability of the Oxoferryl Moiety in Model Complexes of Compound I of Heme-dependant Enzymes" *J. Biol. Inorg. Chem.* **1996**, *1*, 368-71.

18. Z. Gross, S. Nimri, and L. Simkhovich; "Iron Porphyrin Catalyzed Hydroxylation of Ethylbenzene by Ozone" *J. Mol. Cat.* **1996**, *113*, 231-8.

19. Z. Gross and A. Mahammed; "One-pot Synthesis of Dihalo(porphyrinato)-osmium(IV) Complexes. Evidence for Monohalo(carbonyl)osmium(III) Intermediates" *Inorg. Chem.* **1996**, *35*, 7260-3.

20. Z. Gross and L. Simkhovich; "Ozone as Primary Oxidant in Iron(III) Porphyrin Catalyzed Hydroxylation of Hydrocarbons" *J. Mol. Cat.* **1997**, *117*, 243-8.

21. Z. Gross, I. Saltsman, R. P. Pandian, and C. M. Barzilay; "The First Metal Chelation by a Neutral Porphyrin Analogue" *Tetrahedron Lett.* **1997**, *38*, 2383-6.

22. L. Kaustov, M. E. Tal, A. I. Shames, and Z. Gross; "Spin Transition in a Manganese(III) Porphyrin Cation Radical, Its Transformation to a Dichloromanganese(IV) Porphyrin, and Chlorination of Hydrocarbons by the Latter" *Inorg. Chem.* **1997**, *36*, 3503-3511

23. Z. Gross and S. Ini; "Remarkable Effects of Metal, Solvent, and Oxidant on Metalloporphyrin Catalyzed Enantioselective Epoxidation of Olefins" *J. Org. Chem.* **1997**, *62*, 5514-5521.

24. Z. Gross, S. Nimri, C. M. Barzilay, and L. Simkhovich; "Reaction Profile of the Epoxidation of Olefins by Oxoiron(IV) Porphyrin Cation Radical Complexes, Models of the Last Step in Cytochrome P-450 Catalysis", *J. Biol. Inorg. Chem.* **1997**, *2*, 492-505.

25. Z. Gross, A. Mahammed, and C. M. Barzilay; "Halogen to Metal p-Bonding in Metalloporphyrins", *J. Chem. Soc., Chem. Commun.* **1998**, 1105-6.

26. Z. Gross and L. Simkhovich; "Hydroxylation of Simple Alkanes by Iodosylbenzene is Catalyzed more Efficiently by Second than by Third Generation Iron(III) Porphyrins", *Tetrahedron Lett.* **1998**, 39, 8171-4.

27. Z. Gross, N. Galili, and L. Simkhovich; "Metalloporphyrin Catalyzed Asymmetric Cyclopropanation of Olefins", *Tetrahedron Lett.* **1999**, *40*, 1571-4.

28. Z. Gross and S. Ini; "Dual Role of Pyridine *N*-oxides in Ruthenium Porphyrin Catalyzed Asymmetric Epoxidation of Olefins.", *Inorg. Chem.* **1999**, *38*, 1446-9.

29. Z. Gross, N. Galili, and I. Saltsman; "The First Direct Synthesis of Corroles from Pyrrole", *Angew. Chem. Int. Ed. Eng.* **1999**, *38*, 1427-9.

30. Z. Gross, L. Simkhovich, and N. Galili; "First Catalysis by Corrole Metal Complexes: Epoxidation, Hydroxylation, and Cyclopropanation", *J. Chem. Soc., Chem. Commun.* **1999**, 599-600.

31. Z. Gross and A. Mahammed; "Novel Reactivities of Iodosylbenzene in the Catalytic Oxygenation of Olefins", *J. Mol. Cat.* **1999**, *142*, 367-372.

32. Z. Gross and N. Galili; "*N*-Substituted Corroles, a Novel Class of Chiral Ligands", *Angew. Chem. Int. Ed. Eng.* **1999**, *38*, 2366-2369.

33. Z. Gross, N. Galili, L. Simkhovich, I. Saltsman, M. Botoshansky, D. Bläser, R. Boese, and I. Goldberg; "Solvent-Free Condensation of Pyrrole and Pentafluorobenzaldehyde: A Novel Synthetic Pathway to Corrole and Oligopyrromethenes", *Org. Lett.* **1999**, *1*, 599-602.

34. Z. Gross and S. Ini; "Asymmetric Catalysis by a Chiral Ruthenium Porphyrin: Epoxidation, Hydroxylation and Partial Kinetic Resolution of Hydrocarbons", *Org. Lett.* **1999**, *1*, 2077-2080.

35. D. Aviezer, S. Cotton, M. David, A. Segev, N. Khaselev, N.Galili, Z. Gross, and A. Yayon; "Porphyrin Analogues as Novel Antagonists of Fibroblast Growth Factor and Vascular Endotherial Growth Factor Receptor Binding that Inhibit Endothelial Cell Proliferation, Tumor Progression, and Metastasis", *Cancer Research* **2000**, *60*, 2973-2980.

36. L. Simkhovich, N. Galili, I. Saltsman, I. Goldberg, and Z. Gross; "Coordination Chemistry of the Novel 5,10,15-tris(pentafluorophenyl)corrole: Synthesis, Spectroscopy, and Structural Characterization of its Cobalt(III), Rhodium(III), and Iron(IV) Complexes", *Inorg. Chem.* **2000**, *39*, 2704-5.

37. L. Simkhovich, I. Goldberg, and Z. Gross; "First Syntheses and X-ray Structures of a *Meso*-alkyl Substituted Corrole and its Ga(III) Complex", *J. Inorg. Biochem.* **2000**, *80*, 235-238.

38. A. E. Meier-Callahan, H. B. Gray, and Z. Gross; "Stabilization of High-Valent Metals by Corroles: Oxo[Tris(pentafluorophenyl)corrolato]chromium(V)", *Inorg. Chem.* **2000**, *39*, 3605-3607.

39. Z. Gross, G. Golubkov, and L. Simkhovich; "Epoxidation Catalysis by a Manganese(III) Corrole and Isolation of an Oxomanganese(V) Corrole", *Angew. Chem. Int. Ed. Eng.* **2000**, *39*, 4045-4047.

40. J. Bendix, G. Golubkov, H. B. Gray, and Z. Gross; "High Field (High Frequency) EPR Spectroscopy and Structural Characterization of a Novel Manganese(III) corrole", *J. Chem. Soc., Chem. Commun.* **2000**, 1957-1958.

41. J. Bendix, I. J. Dmochowski, H. B. Gray, A. Mahammed, L. Simkhovich, and Z. Gross; "Structural, Electrochemical, and Photophysical Properties of Gallium(III) 5,10,15-tris(pentafluorophenyl)corrole", *Angew. Chem. Int. Ed. Eng.* **2000**, *39*, 4048-4051.

42. L. Simkhovich, A. Mahammed, I. Goldberg, and Z. Gross; " Synthesis and Characterization of Germanium, Tin, Phosphorous, Iron, and Rhodium Complexes of Tris(pentafluorophenyl)corrole, and the Utilization of the Iron and Rhodium Corroles as Cyclopropanation Catalysts", *Chem. Eur. J.* **2001**, *7*, 1041-1055.

43. G. Golubkov, J. Bendix, H. B. Gray, A. Mahammed, I. Goldberg, A. J. DiBilio, and Z. Gross; "High Valent Manganese Corroles and the First Perhalogenated Corrole-Based Catalyst", *Angew. Chem. Int. Ed. Eng.* **2001**, *40*, 2132-2134.

44. L. Simkhovich, S. Rosenberg, and Z. Gross; "Facile Synthesis of a Novel Sapphyrin and its Rhodium(I) Complex", *Tetrahedron Lett.* **2001**, *42*, 4929-4931.

45. Z. Gross; "High Valent Corrole Metal Complexes", *J. Biol. Inorg. Chem.* **2001**, *6*, 733-738.

46. A. Mahammed, I. Giladi, I. Goldberg, and Z. Gross; "Synthesis and Structural Characterization of a Novel Covalently-Bound Corrole Dimer ", *Chem. Eur. J.* **2001**, *7*, 4259-4265.

47. L. Simkhovich and Z. Gross; "Iron(IV) Corroles are Potent Catalysts for Aziridination of Olefins by Chloramine-T", *Tetrahedron Lett.* **2001**, *42*, 8089-8092.

48. A. Mahammed, I. Goldberg, and Z. Gross; "Highly Selective Chlorosulfonation of Tris(pentafluorophenyl)corrole as a Synthetic Tool for the Preparation of Amphiphilic Corroles and Metal Complexes of Chiral Planarity", *Org. Lett.* **2001**, *3*, 3443-3446.

49. S.P. de Visser, F. Ogliaro, Z. Gross and S. Shaik; "What is the Difference Between the Manganese Porphyrin and Corrole Analogs of Cytochrome P450's Compound I", *Chem. Eur. J.* **2001**, *7*, 4954-4960.

50. A. E. Meier-Callahan, A. J. Di Bilio, L. Simkhovich, A. Mahammed, I. Goldberg, H. B. Gray, and Z. Gross; "Chromium Corroles in Four Different Oxidation States", *Inorg. Chem.* **2001**, *40*, 6788-6793.

51. A. Mahammed and Z. Gross; "Aluminum Corrolin, a Novel Chlorophyll Analogue", *J. Inorg. Biochem.* **2002**, *88*, 305-309.

52. A. Segev, D. Aviezer, M. Safran, Z. Gross, and A. Yayon; "Inhibition of Vascular Smooth Muscle Cell Proliferation by a Novel Fibroblast Growth Factor Receptor Antagonist", *Cardiovasc. Res.* **2002**, *53*, 232-241.

53. J. Grodkowski, P. Neta, E. Fujita, A. Mahammed, L. Simkhovich, and Z. Gross; "Reduction of Cobalt and Iron Corroles and Catalyzed Photoreduction of CO_2", *J. Phys. Chem. A* **2002**, *106*, 4772-4778.

54. L. Simkhovich, P. Iyer, I. Goldberg, and Z. Gross; "Structure and Chemistry of *N*-substituted Corroles and their Rhodium(I) and Zinc(II) Metal-Ion Complexes", *Chem. Eur. J.* **2002**, *8*, 2595-2601.

55. I. Saltsman, A. Mahammed, I. Goldberg, E. Tkachenko, M. Botoshansky, and Z. Gross; "Selective Substitution of Corroles: Nitration, Hydroformylation, and Chlorosulfonation", *J. Am. Chem. Soc.* **2002**, *124*, 7411-7420.

56. L. Simkhovich, I. Goldberg, and Z. Gross; "Iron(III) and Iron(IV) Corroles: Synthesis, Spectroscopy, Structures, and no Indications for Corrole Radicals", *Inorg. Chem.* **2002**, *41*, 5433-5439.

57. L. Simkhovich, I. Goldberg, and Z. Gross; "The Effects of Bulky ortho-Aryl Substituents in Corroles, Tested by X-ray Crystallography of the Rhodium Complexes and Catalysis thereby", *J. Porphyrins Phthalocyanines* **2002**, *6*, 439-444.

58. Z. Gross and A. Mahammed; "Selective Sulfonation and Deuteration of Free-base Corroles", *J. Porphyrin Phthalocyanines* **2002**, *6*, 553-555.

59. L. Simkhovich, I. Luobeznova, I. Goldberg, and Z. Gross; "Mono- and Binuclear Ruthenium Corroles: Synthesis, Spectroscopy, Electrochemistry, and Structural Characterization", *Chem. Eur. J.* **2003**, *9*, 201-208.

60. A. Mahammed, H. B. Gray, A. E. Meier-Callahan, and Z. Gross; "Aerobic Oxidations Catalyzed by Chromium Corroles", *J. Am. Chem. Soc.* **2003**, *125*, 1162-1163.

61. A. Mahammed, H. B. Gray, J. Weaver, and Z. Gross; "How Acidic are Corroles and Why?", *Tetrahedron Lett.* **2003**, *44*, 2077-2079.

62. L. Simkhovich, I. Goldberg, and Z. Gross; "Easy Preparation of Cobalt Corrole and Hexaphyrin and Isolation of New Oligopyrroles in the Solvent-Free Condensation of Pyrrole with Pentafluorobenzaldehyde", *Org. Lett.* **2003**, *5*, 1241-1244.

63. I. Saltsman, I. Goldberg, and Z. Gross; "One-step Conversions of a Simple Corrole into Chiral and Amphiphilic Derivatives", *Tetrahedron Lett.* **2003**, 44, 5669-5673.

64. G. Golubkov and Z. Gross; "Chromium(V) and Chromium(VI) Nitrido Complexes of Tris(pentafluorophenyl)corrole", *Angew. Chem.* **2003**, *42*, 4507-4510.

65. I. Luobeznova, L. Simkhovich, I. Goldberg, and Z. Gross; "Electronic structures and Reactivities of Copper-Corrole Complexes" *Eur. J. Inorg. Chem.* **2004**, 1724-1732.

66. Y. S. Balazs, I. Saltsman, A. Mahammed, E. Tkachenko, G. Golubkov, J. Levine, and Z. Gross; "High Resolution NMR Spectroscopic Trends and Assignment Rules of Metal-free, Metallated, and Substituted Corroles", *Magn. Reson. Chem.* **2004**, *42*, 624-635.

67. E. Stavitski, A. Berg, T. Ganguly, A. Mahammed, Z. Gross, and H. Levanon ; "Electron Spin Dynamics in Photoexcited Diamagnetic and Paramagnetic Corroles" *J. Am. Chem. Soc.* **2004**, *126,* 6886-6890.

68. I. Saltsman, L. Simkhovich, Y. S. Balazs, I. Goldberg, and Z. Gross; "Synthesis, Spectroscopy, and Structures of New Rhodium(I) and Rhodium(III) Corroles and Catalysis Thereby", *Inorg. Chim. Acta* **2004**, *357*, 3038-3046.

69. A. Mahammed, H. B. Gray, J. J. Weaver, K. Sorasaenee, and Z. Gross; "Amphiphilic Corroles Bind Tightly to Human Serum Albumin", *Bioconj. Chem.* **2004**, *15*, 738-746.

70. L. Simkhovich and Z. Gross; "Halogeno-Coordinated Iron Corroles", *Inorg. Chem.* **2004**, *43*, 6136-6138.

71. A. Mahammed and Z. Gross; "Albumin-Conjugated Corrole Metal Complexes: Extremely Simple, Yet very Efficient Biomimetic Oxidation Systems", *J. Am. Chem. Soc.* **2005**, *127*, 2883-2887.

72. G. Golubkov and Z. Gross; "Nitrogen Atom Transfer between Manganese Complexes of Salen, Porphyrin, and Corrole and Characterization of a (Nitrido)manganese(VI) Corrole", *J. Am. Chem. Soc.* **2005**, *127*, 3258-3259.

73. I. Luobeznova, M. Raizman, I. Goldberg, and Z. Gross; "Synthesis and Full Characterization of Molybdenum and Antimony Corroles and Utilization of the Latter Complexes as Very Efficient Catalysts for Highly Selective Aerobic Oxygenation Reactions" *Inorg. Chem.* **2006**, *45*, 386-394.

74. H. Agadjanian, J. J. Weaver, A. Mahammed, A. Rentsendorj, S. Bass, J. Kim, I. J. Dmochowski, R. Margalit, H B. Gray, Z. Gross, and L. K. Medina-Kauwe; "Specific Delivery of Corroles to Cells via Noncovalent Conjugates with Viral Proteins", *Pharmaceutical Res.* **2006**, *23*, 367-377.

75. I. Aviv and Z. Gross; "Iron Corroles and Porphyrins as Very Efficient and Highly Selective Catalysts for the Reactions of a-Diazo Esters with Amines", *Synlett* **2006**, 951-953.

76. I. Saltsman, Y. Balazs, I. Goldberg, and Z. Gross; "Synthesis, Spectroscopy, and Structures of Chiral Rhodium(I) Corrole Complexes" , *J. Mol. Cat. A: Chemical* **2006**, *251*, 263-269.

77. Z. Gross and H. B. Gray; "How do corroles stabilize high valent metals?", *Comm. Inorg. Chem* **2006**, *27*, 61-72.

78. R. Goldschmidt, I. Goldberg, Y. Balazs, and Z. Gross; "Synthesis of a Corrole with Small and Electron-withdrawing Substitutents, 5,15-bistrifluromethyl- 10-pentafluorophenylcorrole", *J. Porphyrins Phthalocyanines* **2006**, *10*, 76-86.

79. A. Mahammed and Z. Gross; "Iron and Manganese corroles are very potent catalysts for decomposition of peroxynitrite", *Angew. Chem. Int. Ed.* **2006**, *45*, 6544-6547.

80. I. Aviv and Z. Gross; "Iron Porphyrins Catalyze the Synthesis of Non-Protected Amino Acid Esters from Ammonia and Diazoacetates", *Chem. Commun.* **2006**, 4477-4479.

81. L. Wagnert, A. Berg, E. Stavitski, T. Berthold, G. Kothe, I. Goldberg, A. Mahammed, L. Simkhovich, Z. Gross, and H. Levanon ; "Exploring the photoexcited triplet states of aluminum and tin corroles by time-resolved Q-band EPR" *Appl. Magn. Reson.* **2006**, *30*, 591-604.

82. D.Walker, S. Chappel, A. Mahammed, B. S. Brunschwig, J. R. Winkler, H. B. Gray, A. Zaban, and Z. Gross; "Corrole-Sensitized TiO_2 Solar Cells", *J. Porphyrins Phthalocyanines* **2006**, *10*, 1259-1262.

83. I. Saltsman, I. Goldberg, Y. Balasz, and Z. Gross; "Porphine and Pyrrole-substituted Porphyrin from Cyclocondensation of Tripyrrane with Mono-substituted Pyrroles", *Tetrahedron Lett.* **2007**, 48, 239-244.

84. K. Sorasaenee, P. Taqavi, L. M. Heling, H. B. Gray, E. Tkachenko, A, Mahammed, and Z. Gross; "Amphiphilic Aluminum(III) and Gallium(III) Corrole" , *J. Porphyrins Phthalocyanines* **2007**, *11*, 189-197.

85. Z. Gershman, I. Goldberg and Z. Gross; "DNA Binding and Catalytic Properties of Positively-Charged Corroles", *Angew. Chem. Int. Ed.* **2007**, *46*, 4320-4324.

86. L. Wagnert, A. Berg, E. Stavitski, I. Luobeznova, Z. Gross, and H. Levanon; "Structure-function relationship in antimony corrole photosensitizers. Time-resolved electron paramagnetic resonance and optical study" *J. Porphyrins Phthalocyanines* **2007**, *11*, 645-651.

87. I. Saltsman and Z. Gross; “Microwave-assisted synthesis of non-substituted tripyrrane, tetrapyrrane, and pentapyrrane”, *Tetrahedron Lett.* **2008**, *49*, 247-249.

88. A. Haber, H. Agadjanian, L. K. Medina-Kauwe and Z. Gross; “Coroles that bind with high affinity to both apo and holo Transferrin” *J. Inorg. Biochem.* **2008**, *102*, 446-457.

89. I. Aviv and Z. Gross; “Iron(III) corroles and porphyrins as superior catalysts for the reactions of diazoacetates with nitrogen- or sulfur-containing nucleophilic substrates: synthetic uses and mechanistic insights”, *Chem. Eur. J.* **2008**, *14*, 3995-4005.

90. I. Saltsman, M. Botoshansky and Z. Gross, "Facile synthesis of *ortho*-pyridyl substituted corroles and molecular structures of analogous porphyrins" *Tetrahedron Lett.* **2008**, *49*, 4163–4166.

91. X. Liu, A. Mahammed, U. Tripathy, Z. Gross and R. P. Steer; “Photophysics of Soret-Excited tetrapyrroles in solution. III. Porphyrin Analogues: Aluminum and gallium corroles”, *Chem. Phys. Lett.* **2008**, *459*, 113-118.

92. V. Rozenshtein, L. Wagnert, A. Berg, E. Stavitski, T. Berthold, G. Kothe, I. Saltsman, Z. Gross, and H. Levanon; “Probing the Photoexcited States of Rhodium Corroles by Time-Resolved Q-Band EPR. Observation of Strong Spin-Orbit Coupling Effects”, *J. Phys. Chem. A* **2008**, *112*, 5338-5343.

93. J. H. Palmer, M. W. Day, A. D. Wilson, L. M. Henling, Z. Gross, and H. B. Gray; “Iridium Corroles”, *J. Am. Chem. Soc.* **2008**, *130*, 7786-7787.

94. A. Haber, A. Mahammed, B. Fuhrman, N. Volkova, R. Coleman, T. Hayek, M. Aviram and Z. Gross; “Amphiphilic/bipolar metallocorroles that catalyze the decomposition of reactive oxygen and nitrogen species, rescue lipoproteins from oxidative damage, and attenuate atherosclerosis in mice”, *Angew. Chem. Int. Ed.* **2008**, *47*, 7896-7900.

95. S. Ye, T. Tuttle, E. Bill, L. Simkhovich, Z. Gross, W. Thiel, and F. Neese “The Electronic Structure of Iron Corroles: A Combined Experimental and Quantum Chemical Study”, *Chem. Eur. J.* **2008**, *14*, 10839-10851.

96. R. K. Hocking, S. DeBeer George, Z Gross, F. A. Walker, K. O. Hodgson, B. Hedman, and E. I. Solomon; “Fe L- and K-edge XAS of Low-Spin Ferric Corrole: Bonding and Reactivity Relative to Low-Spin Ferric Porphryin”, *Inorg. Chem.* **2009**, *48*, 1678-1688.

97. D. Kowalska, X. Liu, U. Tripathy, A. Mahammed, Z. Gross, S. Hirayama and R. P. Steer; “Ground and Excited States Dynamics of Aluminum and Gallium Corroles”, *Inorg. Chem.* **2009**, *48*, 2670-2676.

98. H. Agadjanian, J. Ma, A. Rentsendorj, V. Valluripalli, J. Youn Hwang, A. Mahammed, D. L. Farkas, H. B. Gray, Z. Gross, and L. K. Medina-Kauwe;

"Tumor detection and elimination by a targeted gallium corrole", *Proc. Nat. Acad. Sci.* **2009**, *106*, 6100-6105.

99. M. Eckshtain, I. Zilbermann, A. Mahammed, I. Saltsman, Z. Okun, E. Maimon, H. Cohen, D. Meyerstein, and Z. Gross "Superoxide Dismutase Activity of Corrole Metal Complexes', *Dalton Trans.* **2009**, 7879-7882.

100. J. H. Palmer, A. Mahammed, K. M. Lancaster, Z. Gross, and H. B. Gray; "Structures and Reactivity Patterns of Group 9 Metallocorroles", *Inorg. Chem.* **2009**, *48*, 9308-9315.

101. Z. Okun, L. Kupershmidt, T. Amit, S. Mandel, O. Bar-Am, M. B. H. Youdim and Z. Gross; "Manganese corroles prevent intracellular nitration and subsequent death of insulin producing cells", *ACS Chem. Biol.* **2009**, *4*, 910-914.

102. L. Kupershmidt , Z. Okun, T. Amit , S. Mandel , I. Saltsman, A. Mahammed, O. Bar-Am , Z. Gross, and M. B. H. Youdim "Metallocorroles as cytoprotective agents against oxidative and nitrative stress in cellular models of neurodegeneration" *J. Neurochem.* **2010**, *113*, 363-373.

103. L. Wagnert, A. Berg, I. Saltsman, Z. Gross, and V. Rozenshtein, "Time-resolved EPR study of rhodium(III) corrole excited states" *J. Phys. Chem. A* **2010**, 2059-2072.

104. A. Mahammed and Z. Gross; "Chemiluminescence Enhancement and Energy Transfer by the Aluminum(III) Complex of an Amphiphilic/Bipolar and Cell-Penetrating Corrole" *Dalton Trans.* **2010**, *39*, 2998-3000.

105. A. Kanamori, M.-M. Catrinescu, A. Mahammed, Z. Gross, and L. A. Levin "Neuroprotection against superoxide anion radical by metallocorroles in cellular and murine models of optic neuropathy", *J. Neurochem.* **2010**, *114*, 488-498.

106. J. H. Palmer, A. C. Durrell, Z. Gross, J. R. Winkler, and H. B. Gray "Near-IR Phosphorescence of Iridium(III) Corroles at Ambient Temperature", *J. Am. Chem. Soc.* **2010**, *132*, 9230-9231.

107. I. Saltsman, I. Goldberg and Z. Gross "Water-soluble manganese(III) corroles and corresponding (nitrido)manganese(V) complexes", " *J. Porphyrins Phthalocyanines* **2010**, *14*, 615-620.

108. A. Mahammed and Z. Gross "Highly Efficient Catalase Acitivity of Metallcorroles", *Chem. Commun.* **2010**, *46*, 7040-7042.

109. L. Wagnert, R. Rubin, A. Berg, A. Mahammed, Z. Gross and H. Levanon "Photoexcited Triplet State Properties of Brominated and non-Brominated Ga(III)-Corroles as Studied by Time-Resolved EPR", *J. Phys. Chem. B* **2010**, *114*, 14303-14308.

110. A. Kumar, I. Goldberg, M. Botoshansky, Y. Buchman, and Z. Gross "Oxygen Atom Transfer Reactions from Isolated (Oxo)manganese(V) Corroles to Sulfides", *J. Am. Chem. Soc.* **2010**, *132*, 15233-15245.

111. A. Mahammed and Z. Gross "Chlorosulfonated Corrole: a versatile synthon for advanced materials" *J. Porphyrins Phthalocyanines* **2010**, *14*, 911-923. Selected for coverpage.

112. J. Y. Hwang, S. Wachsmann-Hogiu, V. K. Ramanujan, A. G. Nowatzyk, Y. Koronyo, L. K. Medina-Kauwe, Z. Gross, H. B. Gray, and D. L. Farkas "Multimodal wide-field two-photon excitation imaging: characterization of the technique for *in vivo* applications", *Biomed. Opt. Exp.* **2011**, *2*, 356-364.

113. A. Haber, M. Aviram, and Z. Gross, "Protecting the beneficial functionality of lipoproteins by **1-Fe**, a corrole-based catalytic antioxidant", *Chemical Sciene* **2011**, *2*, 295-302. For a highlight of this work, see: http://www.rsc.org/Publishing/ChemScience/Volume/2010/12/iron_complex.asp

114. S. S. Dong, R. J. Nielsen, J. H. Palmer, H. B. Gray, Z. Gross, S. Dasgupta, and W. A. Goddard III "Electronic Structures of Group 9 Metallocorroles with Axial Ammines", *Inorg. Chem.* **2011**, *50*, 764-770.

115. Z. Okun, L. Kupershmidt, M. B. H. Youdim and Z. Gross "Cellular uptake and organ accumulation of amphipolar metallocorroles with cytoprotective and cytotoxic properties", *Anti Cancer Agents in Medicinal Chemistry* **2011**, *11*, 380-384.

116. J. Y. Hwang, Z. Gross, H. B. Gray, L. K. Medina-Kauwe, and D. L. Farkas "Ratiometric spectral imaging for fast tumor detection and chemotherapy monitoring in vivo", *J. Biomed. Opt.* **2011**, *16*, 066007-1 - 066007-6.

117. I. Nigal-Etinger, A. Mahammed, and Z. Gross "Covalent versus non-covalent (biocatalytic) approaches for enantioselective sulfoxidation catalyzed by corrole metal complexes", *Cat. Sci.Tech.* **2011**, *1*, 578-581.

118. J. Vestfrid, M. Botoshansky, J. H. Palmer, A. C. Durrell, H. B. Gray, and Z. Gross "Iodinated Aluminum(III) Corroles with Long-Lived Triplet Excited States", *J. Am. Chem. Soc.* **2011**, *133*, 12899–12901.

119. J. H. Palmer, T. Brock-Nannestad, A. Mahammed, A. C. Durrell, D. VanderVelde, S. Virgil, Z. Gross, and H. B. Gray "Nitrogen Insertion into a Corrole Ring: Iridium Monoazaporphyrins", *Angew Chem.* **2011**, *50*, 9433-9436.

120. E. Rabinovich, I. Goldberg, and Z. Gross "Gold(I) and Gold(III) Corroles", *Chem. Eur. J.* **2011**, *17*, 12294-12301.

121. J. Y. Hwang, J. Lubow, D. Chu, J. Ma, H. Agadjanian, J. Sims, H. B. Gray, Z. Gross, D. L. Farkas, and L. K. Medina-Kauwe "A mechanistic study of

tumor-targeted corrole toxicity", *ACS Mol. Pharmaceutics* **2011**, *8*, 2233-2243.

122. A. Mahammed, B. Tumanskii, and Z. Gross: "Effect of bromination on the electrochemistry, frontier orbitals, and spectroscopy of metallocorroles" *J. Porphyrins Phthalocyanines* **2011**, *15*, 1275-1286.

123. A. Schechter, M. Stanevsky, A. Mahammed, and Z. Gross "Four-Electron Oxygen Reduction by Brominated Cobalt Corrole" *Inorg. Chem.* **2012**, *51*, 22-24.

124. A. Haber, M. Aviram, and Z. Gross "Variables that influence cellular uptake and cytotoxic/cytoprotective effects of macrocyclic iron complexes", *Inorg. Chem.* **2012**, *51*, 28-30.

125. J. Y. Hwang, D. J. Lubow, J. D. Sims, H. B. Gray, A. Mahammed, Z. Gross, L. K. Medina-Kauwe, and D. L. Farkas "Investigating photoexcitation-induced mitochondrial damage by chemotherapeutic corroles using multimode optical imaging", *J. Biomed. Opt.* **2012**, *17*, 015003-1 – 015003-11.

126. Y. Yang, D. Jones, T. von Haimberger, M. Linke, L. Wagnert, A. Berg, H. Levanon, A. Zacarias, A. Mahammed, Z. Gross, and K. Heyne "Assignment of Aluminum Corroles Absorption Bands to Electronic Transitions by Femtosecond Polarization Resolved VIS-Pump IR-Probe Spectroscopy", *J. Phys. Chem. A* **2012**, *116*, 1023-1029.

127. I. Nigel-Etinger, I. Goldberg, and Z. Gross "5d Early Transition-Metal Corroles: a Trioxo-Bridged Binuclear Tungsten(VI) Derivative", *Inorg. Chem.* **2012**, *51*, 1983-1985.

128. P. Lim, A. Mahammed, Z. Okun, I. Saltsman, Z. Gross, H. B. Gray, and J. Termini "Differential Cytostatic and Cytotoxic Action of Metallocorroles Against Human Cancer Cells: Potential Platforms for Anticancer Drug Development", *Chem. Res. Toxicol.* **2012**, *25*, 400-409.

129. M.-M. Catrinescu, W. Chan, A. Mahammed, Z. Gross, and L. A. Levin, "Superoxide signaling and cell death in retinal ganglion cell axotomy: Effects of metallocorroles" *Exp. Eye Res.* **2012**, *97*, 31-35.

130. P. Singh, I. Saltsman, A. Mahammed, I. Goldberg, B. Tumanskii, and Z. Gross "Iron complexes of tris(4-nitrophenyl)corrole, with emphasis on the (nitrosyl)iron complex" *J. Porphyrins Phthalocyanines* **2012**, *16*, 663-673.

131. Z. Okun and Z. Gross "Fine Tuning the Reactivity of Corrole-Based Catalytic Antioxidants", *Inorg. Chem.* **2012**, *51*, 8083-8090.

132. A. Mahammed, M. Botoshansky, and Z. Gross "Chlorinated Corroles", *Dalton Trans.* **2012**, *41*, 10938-10940.

133. J. Y. Hwang, S. Wachsmann-Hogiu, V. K. Ramanujana, J. Ljubimova, Z. Gross, H. B. Gray, L. K. Medina-Kauwe, and D. L. Farkas "A Multimode Optical Imaging System for Preclinical Applications In Vivo: Technology Development, Multiscale Imaging and Chemotherapy Assessment", *Molecular Imaging & Biology* **2012**, *14*, 431-442.

134. M. Tanabe, H. Matsuoka, Y. Ohba, S. Yamauchi, K. Sugisaki, K. Toyota, K. Sato, T. Takui, I. Goldberg, I. Saltsman, and Z. Gross "Time-Resolved EPR and Phosphorescence Studies of the Lowest Excited Triplet States of Rh(III) Corrole Complexes", *J. Phys. Chem. A.* **2012**, *116*, 9662.

135. J. Y. Hwang, J. Lubow, D. Chu, J. Sims, F. Alonso-Valenteen, H. B. Gray, Z. Gross, D. L. Farkas, and L. K. Medina-Kauwe "Photoexcitation of tumor-targeted corrole induces singlet oxygen-mediated augmentation of cytotoxicity", *J. Controlled Release* **2012**, *163*, 368-373.

136. N. Semenishyn and Z. Gross "Lanthanide-corrole conjugates", *Dalton Trans.* **2013**, *42*, 3775-3778.

137. B. Mondal, K. Sengupta, A. Rana. A. Mahammed, M. Botoshansky, S. G. Dey, Z. Gross, A. Dey "Cobalt Corrole Catalyst for Efficient Hydrogen Evolution Reaction from H_2O under Ambient Conditions: Reactivity, Spectroscopy and Density Functional Theory Calculations", *Inorg. Chem.* **2013**, *52*, 3381-3387.

138. I. Nigel-Etinger, I. Goldberg, and Z. Gross "Intriguing Chemistry of Molybdenum Corroles", *Inorg. Chem.* **2013**, *52*, 4139-4341.

139. A. Haber, I. Angel, A. Mahammed and Z. Gross "Combating diabetes complications by **1-Fe**, a corrole-based catalytic antioxidant" *J. Diabetes Complications* **2013**, *27*, 316-321.

140. P. Singh, G. Dutta, I. Goldberg, A. Mahammed and Z. Gross "Expected and Unexpected Transformations of manganese(III) tris(4-nitrophenyl)corrole", *Inorg. Chem.* **2013**, 52, 9349-9355.

141. A. Haber, A. Abu-Younis Ali, M. Aviram, and Z. Gross "Allosteric inhibitors of HMG-CoA reductase, the key enzyme involved in cholesterol biosynthesis", *Chem. Commun.* **2013**, *49*, 10917-10919. Highlighted in Chemistry World (rsc.org/chemistryworld/2013/08/antioxidant-statin-alternative-cholesterol).

142. A. Mahammed, B. Mondal, A. Rana, A. Dey, and Z. Gross "The Cobalt Corrole Catalyzed Hydrogen Evolution Reaction: Surprising Electronic Effects and Characterization of Key Reaction Intermediates" *Chem. Commun.* **2014**, *50*, 2725-2727.

143. A. Preuß, I. Saltsman, A. Mahammed, M. Pfitzner, I. Goldberg, Z. Gross and B. Röder "Photoinactivation of mold fungi spores by newly developed charged corroles", *J. Photochem. Photobiol. B: Biol.* **2014**, *133*, 39-46.

144. J. Vestfrid, I. Goldberg, and Z Gross "Tuning the photophysical and redox properties of metallo-corroles by iodination" *Inorg. Chem.* **2014**, *53*, 10536.

145. R. D. Teo, H. B. Gray, P. Lim, J. Termini, E. Domeshek, and Z. Gross "Cytotoxic and Cytostatic Gold(III) Corrole", *Chem. Commun.* **2014**, *50***,** 13789.

146. J. Pohl, I. Saltsman, A. Mahammed, Z. Gross and B. Röder "Inhibition of green algae growth by corrole-based photosensitizers", *J. Appl. Microbiol.* **2014**, *118*, 305-312.

147. S. Avidan-Shlomovich and Zeev Gross "Reaction mechanism for the highly efficient catalytic decomposition of peroxynitrite by the amphipolar iron(III) corrole **1-Fe**", *Dalton Trans.* **2015**, *44*, 12234 – 12243.

148. I. Saltsman, I. Goldberg, and Z. Gross "Porphyrins and Corroles with 2,6-Pyrimidyl Substituents", *Org. Lett.* **2015**, *17*, 3214-3217.

149. N. Semenishyn, A. Mahammed and Z. Gross "Corrole-Decorated Porphyrin Dendrimer and its Selective Metallation", *Eur. J. Org. Chem.* **2015**, 5079-5083.

150. J. D. Sims, J. Y. Hwang, S. Wagner, F. Alonso-Valenteen, C. Hanson, J. M. Taguiam, R. Polo, I. Harutyunyan, G. Karapetyan, K. Sorasaenee, A. Ibrahim, E. Marban, R. Moats, H. B. Gray, Z. Gross, and L. K. Medina-Kauwe "A corrole nanobiologic elicits tissue-activated MRI contrast enhancement and tumor-targeted toxicity", *J. Controlled Release* **2015**, *217*, 92-101.

151. A. Mahammed and Z. Gross "Metallocorroles as photocatalysts for driving endergonic reactions, exemplified by bromide to bromine conversion", *Angew. Chem.* **2015**, *54*, 12370 –12373.

152. R. D. Teo, S. S. Dong, Z. Gross, H. B. Gray, and W. A. Goddard "Computational predictions of corroles as a class of Hsp90 inhibitors", *Mol. BioSys.* **2015**, *11*, 2907-2914.

153. N. Levy, A. Mahammed, M. Kosa, D. T. Major, Z. Gross, and L. Elbaz "Metallocorroles as Non-Precious Metal Catalysts for Oxygen Reduction", *Angew. Chem.* **2015**, *54*, 14080-14084.

154. C. Herrero, A. Quaranta, R. Ricoux, A. Trehoux, A. Mahammed, Z. Gross, F. Banse, and J.-P. Mahy "Oxidation catalysis via visible-light water activation of a $[Ru(bpy)_3]^{2+}$ chromophore BSA-metallocorrole couple" *Dalton Trans.* **2016**, *45*, 706-710.

155. T. Bornhuetter, J. Pohl, C. Fischer, I. Saltsman, A. Mahammed, Z. Gross, and B. Roeder "Development of singlet oxygen luminescence kinetics during the photodynamic inactivation of green algae", *Molecules* **2016**, *21*, 485 (doi:10.3390/molecules21040485), 11 pages.

156. S. Fischer, J. Vestfrid, A. Mahammed, F. Herrmann-Westendorf, M. Schulz, J. Müller, O. Kiesewetter, B. Dietzek, Z. Gross, and M. Presselt "Photometric Detection of Nitric Oxide Using a Dissolved Iron(III)Corrole as Sensitizer" *ChemPlusChem* **2016**, *81*, 594 – 603.

157. J. Vestfrid, R. Kothari, A. Kostenko, I. Goldberg, B. Tumanskii, and Z. Gross "Intriguing Physical and Chemical Properties of Phosphorus Corroles" *Inorg. Chem.* **2016**, *55*, 6061-6067.

158. T. Stensitzki, Y. Yang, A. Berg, A. Mahammed, Z. Gross, and K. Heyne "Ultrafast electronic and vibrational dynamics in brominated Aluminum corroles: Energy relaxation and triplet formation" *Structural Dynamics* **2016**, *3*, 043210-1 - 043210-9 (http://dx.doi.org/10.1063/1.4949363).

159. N. Levy, A. Mahammed, A. Friedman, B. Gavriel, Z. Gross, and L. Elbaz "Metallocorroles as Non-Precious Metal Electrocatalysts for Highly Efficient Oxygen Reduction in Alkaline Media" *ChemCatChem* **2016**, *8*, 2832-2837.

160. M. Soll, O. Bar-am, A. Mahammed, I. Saltsman, S. Mandel, M. Youdim, and Z. Gross "Neurorescue by a ROS Decomposition Catalyst", *ACS Chem. Neuroscience* **2016**, *7*, 1374−1382.

161. P. Gopinath, A. Mahammed, S. Ohayon, Z. Gross and A. Brik "Understanding and predicting the potency of ROS-based enzyme inhibitors, exemplified by naphthoquinones and ubiquitin specific protease-2", *Chem. Science* **2016**, *7*, 7079-7086 (*Edge Article*).

162. M. Soll, K. Sudhakar, N. Fridman A. Müller, B. Röder, and Z. Gross "One pot conversion of fluorophores to phosphorophores", *Org. Lett.* **2016**, *18*, 5840-5843.

163. K. Mittra, B. Mondal, A. Mahammed, Z. Gross, and A. Dey, "Dioxygen bound Cobalt Corroles", *Chem. Commun.* **2017**, *53*, 877-880.

164. S. Bhowmik, M. Kosa, A. Mizrahi, N. Fridman, M. Saphier, A Stanger, and Z. Gross "The planar cyclooctatetraene bridge in bismetallic macrocycles: isolating or conjugating?" *Inorg. Chem.* **2017**, 56, 2287-2296.

165. C. Zahn, T. Stensitzki, M. Gerecke, A. Berg, A. Mahammed, Z. Gross, and K. Heyne "Ultrafast dynamics of Sb-corroles: A combined Vis-pump supercontinuum probe and broadband fluorescence up-conversion study" *Molecules* **2017**, *22*, 1174 (pp. 1-13, DOI: 10.3390/molecules22071174).

Accepted (or in press) papers

166. K. Sudhakar, A. Mizrahi, M. Kosa, N. Fridman, B. Tumanskii, M. Saphier, and Z. Gross "Selective CF_3 Substitution for Affecting the Physical and Chemical Properties of Gold Corroles" *Angew. Chem.* **2017**, 0000.

167. P Gopinath, A. Mahammed, T. Eilon-Shaffer, M. Nawatha, S. Ohayon, D. Shabat, Z. Gross and A. Brik "Switching Futile para-Quinone to Efficient ROS Generator: Ubiquitin Specific Protease-2 Inhibition, Electrocatalysis and Quantification" *ChemBioChem* (Jun 22, 2017, **DOI:** 10.1002/cbic.201700330)

Submitted papers

168. T. Bornhütter, N. Shamali, I. Saltsman, A. Mahammed, Z. Gross, G. Daeschlein, and B. Roeder "Singlet oxygen luminescence kinetics under PDI of pathogenic dermatophytes and molds" *J. Photochem. Photobiol. B: Biology* (Jun 20, 2017).

169. A. Mahammed and Z. Gross "Corroles as Triplet Photosensitizers", submitted to *Coord. Chem. Rev.* on July 27, 2017

In Preparation

170.

Review articles (and similar)

171. Z. Gross and H. B. Gray; "Oxidations Catalyzed by Metallocorroles" *Adv. Syn. Cat.* **2004**, *346*, 165-170.

172. J. J. Weaver, K. Sorasaenee, M. Sheikh, R. Goldschmidt, E. Tkachenko, Z. Gross, and H. B. Gray; "Gallium(III) Corroles", *J. Porphyrins Phthalocyanines* **2004**, *8*, 76-81.

173. I. Aviv and Z. Gross; "Corrole-based Applications", *Chem. Commun.* **2007**, 1987-1999 (*Feature Article*). Selected for coverpage.

174. Z. Gross; "The Groves-Spiro Dioxomanganese(V) Story", *Angew. Chem. Int. Ed.* **2008**, *47*, 2737 – 2739 (*Highlight article*).

175. I. Aviv-Harel and Z. Gross; "Aura of corroles", *Chem. Eur. J.* **2009**, *15*, 8382-8394 (*Concept Article*).

176. I. Aviv-Harel and Z. Gross "Coordination chemistry of corroles with focus on main group elements", *Coord. Chem. Rev.* **2011**, *255*, 717-736.

177. A. Mahammed and Z. Gross "The importance of developing metal complexes with pronounced catalase-like activity", *Cat. Sci. Tech.* **2011**, *1*, 535-540 (*Perspective article*).

178. A. Haber and Z. Gross "Catalytic Antioxidant Therapy by Metallodrugs: Lessons from Metallocorroles",*Chem. Commun.* **2015**, *51*, 5812-5827 (*Perspective Article*).

179. A. Mahammed and Z. Gross “Metallocorroles as Electrocatalysts for the Oxygen Reduction Reaction (ORR)", *Israel J. Chem.* **2016**, *56*, 756-762 (invited review in honor of H.B. gray’s 80th birthday)

180. R. D. Teo, J. Y. Hwang, J. Termini, Z. Gross, and H. B. Gray “Fighting Cancer with Corroles” *Chem. Rev.* **2017**, *117*, 2711–2729.

Books

181. 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, Dordtrecht, NATO ASI Series, Vol. 459, 1995, 39-47.

Refereed papers in conference proceedings

182. C. M. Barzilay, S. A. Sibilia, T. G. Spiro, and Z. Gross; "Tuning the Intramolecular Spin Coupling in Metalloporphyrin Cation Radicals" *J. Inorg. Biochem.* **1995**, *59*, 517.

183. Z. Gross; "*Thermodynamic and Kinetic Effects of Axial Ligands in Compound I Analogues of Cytochrome P-450*." *FASEB J.* **1997**, *11*, A780.

184. 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.

185. Z. Gross, N. Galili, and L. Simkhovich; "Corroles, Ligands of the Future", *J. Inorg. Biochem.* **1999**, 74, 27.

186. J. Y. Hwang, H. Agadjanian, L. K. Medina-Kauwe, Z. Gross, H. B. Gray, K. Sorasaenee, 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).

Patents

1. N. Galili-Nachshon, L. Simkhovich, Z. Gross, I. Saltsman (Technion Res & Dev Foundation); "Process for the Preparation of Corroles, Several such New Compounds Including Chiral Derivatives, and the Use Thereof”, International Publication Date: 6.4.2000 (WO 00/18771 & AU5881499). **Approved as US 6,541,628 B1, April 1 2003 and as European Patent No. EP 1 117 666 B1 on December 1 2004 (the process only) and EP 1 469 001 A1 (compounds and their use) on 20/10/2004. Approved in Canada on April 6, 2000 as CA2345700**

2. 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**.

3. Z. Gross, A. Mahammed, I. Saltsman (Technion Res & Dev Foundation); "Methods for the Preparation of Selectively-Substituted Corroles and New Substituted Corroles", **Priority date:** July 2, 2001, International Publication Date: 16.1.2003 (WO 03/004021). **Approved** as **US 6,939,963 B2 on September 6, 2005**, as European Patent **EP 1 411 927 B1 on June 30, 2010**, and **Canadian Patent 2,452,644 on January 22, 2013**.

4. Z. Gross, M. Aviram, A. Haber, B. Fuhrman, A. Mahammed, and R. Coleman (Technion Res & Dev Foundation); "Transition metal complexes of corroles for preventing cardiovascular diseases or disorders", **Priority date:** August 28, 2007. Publication number: WO/2009/027965. **Approved in Europe, EP2192899 on June 9, 2010; Approved in Canada CA 2698552 A1 on March 5, 2009**; **Approved in Australia as AU2008293376 on July 11 2013**. **Approved in the US as US 8,791,099 on July 29 2014.**

5. 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.

6. J. Palmer, Z. Gross, and H. B. Gray "Metallocorroles", **Priority date**: May 22, 2009 and **Approved as US 8,680,266 B2**, on March 25, 2014. In addition, **US 9,243,015** was granted on January 26, 2016.

7. 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

8. Z. Gross, A. Haber and I. Angel (Technion Res. & Dev. Foundation); "Method of treatment of disease", submitted on October 25, 2012, **approved on July 12, 2016**. Major requests from Europe,

9. M. Soll and Z. Gross "Corrole Compositions", submitted July 31, 2016 to IL only.

CONFERENCES

Plenary, keynote or invited talks

(all are invited talks, with plenary and keynote talks emphasized)

1. Z. Gross and C. Barzilay; *The Israel Chemical Society 58th Annual Meeting*, Bar-Ilan University, Ramat Gan, February 17-18, 1993. "Oxidized Metalloporphyrins as Models for Intermediates Involved in Hemoprotein Catalysis."

2. Z. Gross and S. Nimri; *European Research Conference, Chemistry of Metals in Biological Systems*, San Miniato-Italy, 22-28 April, 1995. "Isolation and Characterization of an Intermediate in the Reaction of Oxoiron(IV) Porphyrin Cation Radicals with Olefins."

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 Funcitonal 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**)

12. Z. Gross; The *Ninth International Conference on Bioinorganic Chemistry (ICBIC IX)*, Minneapolis, Minnesota, USA, July 11-16, 1999. "Corroles, Ligands of the Future"

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."

21. Z. Gross; The *2nd International Conference on Porphyrins and Phthalocyanines*, Kyoto, Japan, June 30-July 5, 2002. "Superior Catalysis by Corrole Metal Complexes"

22. Z. Gross; The *2nd International Conference on Porphyrins and Phthalocyanines*, Kyoto, Japan, June 30-July 5, 2002. "Amphiphilic Corroles: Preparation via Selective Modification of the Corrole Skeleton and Interactions with Proteins"

23. L. Simkhovich, A. Mahammed, I. Saltsman, G. Golubkov, and Z. Gross; The *7th European Mediterranean Conference in Inorganic Chemistry (FIGIPS VII)*, Lisbon-Portugal, June 11-14, 2003. “Catalysis by Metal Complexes of Novel Corroles”

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 "

25. H. B. Gray, K. Sorasaenee, J. J. Weaver, A. E. Meier, A. Mahammed, and Z. Gross; *227th National Meeting of the American Chemical Society*, Anaheim, California-USA, March 28 – April 1, 2004. "Oxidations Catalyzed by Metallocorroles."

26. Z. Gross; The *3rd International Conference on Porphyrins and Phthalocyanines*, New Orleans, USA, July 11-16, 2004. "Asymmetric Catalysis by Bioconjugated Corroles"

27. Z. Gross; *International Conference on Supramolecular Science & Technology (ICSS&T 2004)*, Prague, Czech Republic, September 5-9, 2004. "Non-covalent Conjugates of Corroles and Proteins: Extremely simple, yet very effective biomimetic systems"

28. Z. Gross; *The Israel Chemical Society 70th Annual Meeting*, Tel Aviv, Israel: 15-16 February, 2005. "Oxygen and Nitrogen Atom Transfer from *Isolated* Oxo and Nitrido Complexes."

29. A. Mahammed, G. Golubkov, L. Simkhovich, and Z. Gross; *Pacifichem 2005 (Symposium Title: Dioxygen Activation Chemistry of Metalloenzymes and Models)*, Honolulu, Hawai, USA, December 15-20, 2005,."Oxygen Atom Transfer Catalysis by Manganese and Chromium Corroles"

30. Z. Gross; *The Israel Chemical Society 71th Annual Meeting*, Tel Aviv, Israel: 15-16 February, 2006. "Catalytic NH Activation by Corrole Metal Complexes."

31. Z. Gross; The *4th International Conference on Porphyrins and Phthalocyanines*, Rome, Italy: 2-7 July 2006."How do the readily oxidized corroles 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. "Corrole 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 corrole 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 corrole 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 corrole 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 (ISMSC-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 Metting (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 Metting (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**).

46. Z. Gross; *Gordon Research Conference on "Tetrapyrroles, Chemistry & Biology Of"*, Salve Regina University, Newport, RI (USA), July 25-30, 2010. "Metallocorroles for cellular and whole animal imaging and as therapeutic molecules".

47. Z. Gross; The Tetrapyrrole Discussion Group Meeting, Berlin-Germany, September 13-14, 2010. “Serum distribution, cellular and organ imaging, and therapeutic utility of metallocorroles”

48. Z. Gross; *5th Asian Biological Inorganic Chemistry Conference*, Kaohsiung, Taiwan, November 2-5, 2010. “Imaging organ and cellular uptake of metallocorroles 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 metallocorroles 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 Metting (ECS)*, Montreal, Canada, May 1-6, 2011. “Catalytic Decomposition of Reactive Oxygen and Nitrogen Species by Corrole metal complexes”

51. Z. Gross; *3rd Georgian Bay International Conference on Bioinorganic Chemistry*, Parry Sound, Canada, May 31-June 4, 2011. “Metallocorroles: 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 Metallocorroles 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 Metallocorroles for Medicinal Applications” **(Foreign Speaker**).

54. Z. Gross; *The Israel Chemical Society 77th Annual Meeting*, Ramat Gan, Israel: February 7-8, 2012. "Redox active metallocorroles 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 Metallocorroles”

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 corrole 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 corrole 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 Metallocorrole/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. "Metallocorroles 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. "Metallocorroles 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 Metallocorroles"

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. "" (**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 Photo-catalysis" (**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"

Contributed Lectures

82. 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."

83. 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."

84. 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."

85. 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."

86. 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)

87. 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"

88. Z. Gross and S. Ini; XIIth FECHEM 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."

89. 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."

90. 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.”

91. 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”

92. 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"

93. A. Mahammed, G. Golubkov, and Z. Gross; 9th International SymposiumActivation of Dioxygen and Homogeneous Catalytic Oxidation, Cologne, GermanyJuly 25-29, 2005. “Stoichiometric, Catalytic, and Enantioselective Oxygen Atom Transfer Reactions by Manganese Corroles”

94. 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"

95. 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"

96. 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.

97. Z. Gross; Medicinal Redox Inorganic Chemistry, Erlangen—Germany, July 20-22 2013. "*Corrole Metal Complexes: From pure science to preclinical investigations*"

98. 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".

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