

CURRICULUM VITAE AND LIST OF PUBLICATIONS

Dr. Yael Albo

PERSONAL DETAILS

Name: Yael Albo

Date and place of birth: July 16, 1976, Beer Sheva, Israel.

Regular military service: August 15, 1994 – May 9, 1996

Address and telephone number at work: Chemical Engineering Department, Ariel University, Kiriyat Hamada 3, Ariel, Israel. 972-74-7296786

Address and telephone number at home: Vangruver 5/20 Petach Tikva, Israel. 972-39193276, 972-506378588

LIST OF CITATIONS

<https://scholar.google.com/citations?user=23K0VBgAAAAJ&hl=en&authuser=1>

EDUCATION

B.Sc.: 1996-2000, Ben-Gurion University, Israel, Chemical Engineering Department (Graduated *Cum Laude*).

M.Sc.: 2000-2002, Ben-Gurion University, Israel, Chemistry Department (Graduated *Cum Laude*).

Supervisor: Prof. Meyerstein Dan.

Title of thesis: "Design and synthesis of ligands for high valent transition metal cations".

Ph.D.: 2002-2007, Ben-Gurion University, Israel, Chemistry Department.

Supervisor: Prof. Meyerstein Dan.

Title of thesis: "Design and synthesis of ligands for high valent transition metal cations".

EMPLOYMENT HISTORY

2009 to present: Lecturer, Chemical Engineering Department, Ariel University, Israel.

2008-2009: Instructor, Chemical Engineering Department, Ariel University, Israel.

2004-2007: Teaching assistant, Chemical Engineering Department, SCE - Shamoon College of Engineering, Israel.

2000-2007: Teaching assistant, Chemistry Department, Ben-Gurion University of the Negev, Israel.

PROFESSIONAL ACADEMIC ACTIVITIES

2010 to present: Academic consultant for second year B.Sc. students at Ariel University.

EDUCATIONAL ACTIVITIES

(a) Teaching activities

2008 to present at Ariel University:

Undergraduate courses: "Chemical Engineering 1- Fluid Mechanics", "Chemical Engineering 2- Heat Transfer", "Introduction to Chemical Engineering", "Analytical Methods for Chemical Engineering", "Introduction to Material Engineering".

Graduate course: "Kinetics and Catalysis"

Laboratory supervisor: "Instrumentation in the chemical engineering and the biotechnology industry", "Separation laboratory", "Chemical engineering and processes control laboratory".

(b) Supervising research students

2019- Liraz Kuztashi M.Sc. thesis, Ariel University.

2018- Post-doctoral fellow: Dr. Jaydeep Adhikary.

2018-Neelam Singh Ph.D. thesis, Ariel University (Jointly supervised, Prof. Dan Meyerstein).

2017- Michael Meistelman M.Sc. thesis, Ariel University (Jointly supervised with Prof. Dan Meyerstein).

2017- Reem Nassar M.Sc. thesis, Ariel University.

2015 – Yulia Katzman M.Sc. thesis, Ariel University (Jointly supervised with Prof. Dan Meyerstein).

2014 – Lior Hayoun M.Sc. thesis, Ariel University.

2011 – Stephanie Gottesman M.Sc. thesis, Bar-Ilan University (jointly supervised with Prof. Haim Cohen and Prof. Moshe Lalush)

2009 to present: Supervised 35 B.Sc. students final projects.

AWARDS

Teaching excellence award, Ariel University, 2018

Teaching excellence award, Ariel University, 2015

RESEARCH GRANTS

2018 Ariel University internal grant

Subject: "Ag@ORMOSIL Catalyst for Environmental, Biocidal, and Synthetic Applications".

Total Amount: 14,000 NIS

2018 Ariel Scientific Innovations LTD internal grant: Joint research with Prof. Dan Meyerstein.

Subject: "Development of catalytic degradation system for industrial organic waste"

Total amount: 40,000 NIS

2015 Pazi foundation: Joint research with Dr. A. Burg (SCE) and Dr. D. Shamir (NRCN).

Subject: "Sol-gel matrices as ion and electron exchange columns and as redox catalysts"

Period of grant: 4 years.

Total amount: 1,120,000 NIS (280,000 NIS per year)

RESEARCH STUDENTS SUPERVISOR

2019: Michael Meistelman Ph.D. thesis "Zero valent iron nanoparticles incorporated in sol-gel matrices as catalysts in environmental processes.

2017 to present: Keren Trabelsi, M.Sc. thesis, "Ag@ORMOSIL catalyst for environmental, biocidal, and synthetic applications" (the research is in collaboration with Dr. Mario Pagliaro CNR Italy).

2017 to present: Yana Guryanov Ph.D. thesis "Fixation of antibacterial species in porous matrices".

2017 to present: Aswin Vijay, Ph.D. thesis, "Hydrogen spillover from M⁰ nanoparticles encapsulated in sol-gel matrices", Ariel University.

PRESENT ACADEMIC ACTIVITIES

Research in progress:

1. "Immobilization of Iron NPs in SiO₂ matrices via sol-gel technology and their environmental applications"
2. "Immobilization of noble metal nanoparticles in porous solid frameworks and investigation of their chemical and catalytic properties"
3. "Development of Inorganic electron exchange columns"
4. "Entrapment of complexes in sol-gel matrices for practical applications"
5. "Incorporation antibacterial species into sol-gel matrices"
6. "Influences of silica nanoparticles size and content on blended cement properties"

SCIENTIFIC PUBLICATIONS LIST YAEL ALBO

ARTICLES PUBLISHED IN PEER-REVIEWED JOURNALS

1. Jaydeep Adhikary, Dan Meyersteina, Vered Marks, Michael Meistelman, Gregory Gershinsky, Ariela Burg, Dror Shamir, Haya Kornweitz, **Yael Albo** (corresponding author), (2018), "Sol-gel entrapped Au⁰ - and Ag⁰ -nanoparticles catalyze reductive dehalogenation of halo-organic compounds by BH₄⁻". Applied Catalysis B: Environmental, 239, 450-469.
2. Neelam Singh, Dan Meyerstein Ariela Burg, Dror Shamir, **Yael Albo** (corresponding author), (2018), "Polyoxometalates entrapped in sol-gel matrices as an electron exchange column and as catalyst for the reductive de-halogenation of halo-organic acids in water". Accepted for publication in "Journal of Coordination Chemistry".
3. Dror Shamir, Eric Maimon, Israel Zilbermann, Ariela Burg, **Yael Albo**, Alexander I Shames, Radion Vainer, Eitan J.C. Borojovich, Guy Yardeni, Haya Kornweitz, Dan Meyerstein, (2018), "Copper catalyze the reduction of perchlorate by both formaldehyde and by dihydrogen in aqueous solutions". Accepted for publication in "Journal of Coordination Chemistry".
4. Neelam Singh, **Yael Albo** (corresponding author), Ariela Burg, Dror Shamir, Dan Meyerstein, (2017), "Bromate reduction by an electron exchange column". Chemical Engineering Journal, 330, 419-422.
5. **Yael Albo** (corresponding author), Lior Hayoun, Elizabeta Shandalov, Israel Zilbermann, Eric Maimon and Dan Meyerstein, (2017), "Homogeneous and Heterogeneous Electrocatalytic Reduction of Halo-organic Compounds by (Ni^{II}L_i) (L_i = tetraazamacrocyclic ligand) in aqueous solutions". Inorganica Chimica Acta, 466, 502-509.
6. Ariela Burg, Yaniv Wolfer, Dror Shamir, Haya Kornweitz, **Yael Albo**, Eric Maimon, Dan Meyerstein, (2017), "The Role of Carbonate in Electro-catalytic water oxidation by Ni(Cyclam)²⁺". Dalton Transactions, 46, 10774-10779.
7. Michael Meistelman, Jaydeep Adhikary, Ariela Burg, Dror Shamir, Gregory Gershinsky, Dan Meyerstein, **Yael Albo** (corresponding author), (2017) "Ag⁰ and Au⁰ Nanoparticles Encapsulated in Sol-Gel Matrices as Catalysts in Reductive De-halogenation Reactions". Chim. Oggi Chem. Tod. Catalysis and Biocatalysis, 35 (5), 16-19.
8. Jaydeep Adhikary, Michael Meistelman, Ariela Burg, Dror Shamir, Dan Meyerstein, and **Yael Albo** (corresponding author), (2017), "The Reductive De-halogenations of Mono and Tribromo Acetic Acids by NaBH₄ Catalyzed by Gold Nanoparticles Entrapped in Sol-Gel

Matrices Follow Different Pathways". *European Journal of Inorganic Chemistry*, 2017 (11), 1510-1515.

9. Stephanie Gottesman, Haim Cohen, **Yael Albo** (corresponding author), (2017), "Removal of toxic trace elements from aqueous solutions using a SiO₂-sol-gel/2, 2'-(imidazolidine-1,3-diylbis(methylene))bis(3,5-di-*tert*-butylphenol) matrix. *Glass Physics and Chemistry*, 43 (5) 429-435.
10. Neelam Singh, **Yael Albo** (corresponding author), Ariela Burg, Dror Shamir, Subramanian Palaniappan, Gil Goobes, Dan Meyerstein, (2016), "Polyoxometalate entrapped in sol-gel matrices for reducing electron exchange columns applications". *J. of Coordination Chemistry*, 69 (23), 3449-3457.
11. Ariela Burg, Dror Shamir, Lina Apelbaum, **Yael Albo**, Eric Maimon, Dan Meyerstein, (2016), "Electrocatalytic Oxidation of Amines by Ni-(1,4,8,11-tetraazacyclotetradecane)²⁺ Entrapped in Sol–Gel Electrodes". *European Journal of Inorganic Chemistry*, 2016 (4) 459-463.
12. **Yael Albo** (corresponding author), Nina Buzaglo, Eric Maimon, Israel Zilbermann, Dan Meyerstein, (2015), "Design of a ligand suitable for sensitive uranyl analysis in aqueous solutions". *Journal of Coordination chemistry*, 68 (17-18), 3079-3089.
13. **Yael Albo** (corresponding author), Eric Maimon, Israel Zilbermann, Magal Saphier and Dan Meyerstein, (2009), "A New Chelate Ligand Designed for the Uranyl Ion", *Coordination Chemistry Reviews*, 253, 15, 2049-2055.
14. **Yael Albo**, Eric Maimon, Israel Zilbermann, Magal Saphier, Haim Cohen, Dan Meyerstein, (2005), "The Redox Chemistry of (N1- [3-(2-aminoethylimino)-1,1 – dimethylbutyl]ethane-1,2-diamine)nickel(II) Perchlorate, Ni(II)L¹(ClO₄)₂, in Aqueous Solutions – A Pulse Radiolytic and an Electrochemical Study". *European Journal of Inorganic Chemistry*, 2005 (21), 4335-4340.

BOOK CHAPTERS

1. Tomer Zidki, Ronen Bar-Ziv, Ariela Burg, Yael Albo, Dan Meyerstein, (2016) "Radical Reactions at Surfaces". In book: *The Optimization of Composition, Structure and Properties of Metals, Oxides, Composites, Nano and Amorphous Materials*. Publisher: Russian Academy of Sciences, Ekaterinburg, Editors: M. Zinigrad and E. Pastukhuy, Ural Branch Russian Academy of Sciences, 180-185.
2. Yael Albo, Michael Meistelman, Ariela Burg, Dror Shamir, (2016) "Entrapment of Ag⁰ and Au⁰ nanoparticles in sol-gel matrices for catalytic applications". In book:

The Optimization of Composition, Structure and Properties of Metals, Oxides, Composites, Nano and Amorphous Materials. Publisher: Russian Academy of Sciences, Ekaterinburg, Editors: M. Zinigrad and L. Pastukhuv, Ural Branch Russian Academy of Sciences, 4-9.

3. Ariela Burg, Yael Albo, Dror Shamir, Yair Lavi, Michael Meistelman, Neelam Singh, Dan Meyerstein (2015), "Transition metal complexes and nano-particles entrapped in sol-gel matrices as electron exchange columns and as redox catalysts". In book: The optimization of Composition, Structure and Properties of Metals, Oxides, Composites, Nano and Amorphous Materials, Publisher: Russian Academy of Sciences, Ekaterinburg, Editors: M. Zinigrad and L. Pastukhuv, Ural Branch Russian Academy of Sciences, 59-70.

LECTURES AND PRESENTATIONS AT MEETINGS AND INVITED SEMINARS NOT FOLLOWED BY PUBLISHED PROCEEDINGS

1. Alina Sermiagin, Ronen Bar-Ziv, Jaydeep Adhikary, Vered Marks, Ariela Burg, Dror Shamir, Haya Kornweitz, Tomer Zidki, Yael Albo, Dan Meyerstein, "M⁰-nanoparticles catalyze the reductive de-halogenation of halo-organic compounds by BH₄⁻ in aqueous media: What determines the nature of hydrogen atoms on M⁰ surfaces". ECIRM 3, European Colloquium Inorganic Reaction Mechanism, Barcelona, Spain, July 2018.
2. Yanna Gurianov, Faina Nakonechny, Yael Albo and Marina Nisnevitch, "Metal-polymer composites for water disinfection". The 53rd Annual Meeting of the Israel Institute of Chemical Engineers, Tel Aviv, Israel, June 2018.
3. Yael Albo, "Ag⁰ and Au⁰ nanoparticles encapsulated in sol-gel matrices as catalysts in reductive de-halogenation reactions", 8th Annual Global Congress of Catalysis, Shanghai, China, October 2017. Invited Lecture
4. Yael Albo (Presenter), Michael Meistelman, Jaydeep Adhikary, Ariela Burg, Dror Shamir, "Ag⁰ and Au⁰ nanoparticles encapsulated in sol-gel matrices as catalysts in reductive de-halogenation reactions". The 8th Eastern Mediterranean Chemical Engineering Conference, Haifa, Israel, February-March 2017.
5. Liraz Kuztashi, Yael Albo, "Dye degradation by using M⁰ nanoparticles incorporated in SiO₂ matrices". 20th International Conference on Advanced Nanotechnology, Amsterdam, Netherlands, September 2017.

6. Neelam Singh, Yael Albo, Ariela Burg, Dror Shamir, Dan Meyerstein, "Electron exchange columns for contaminated water treatment". The 82th Meeting of the Israel chemical society, Tel Aviv, Israel, February 2017.
7. Tomer Zidki, Ronen Bar-Ziv, Ariela Burg, Yael Albo, Dan Meyerstein (presenter), "Radical reactions at surfaces", 3rd European Colloquium on Inorganic Reaction Mechanisms, Krakow, Poland 2016. Invited Lecturer
8. Neelam Singh, Yael Albo, Ariela Burg, Dror Shamir, Dan Meyerstein, "Polyoxometalates entrapped in sol-gel matrices for reducing electron exchange column applications". The ICC-42, Brest, France, July 2016.
9. Yael Albo (presenter), Michael Meistelman, Ariela Burg, Dror Shamir, "Entrapment of Ag⁰ and Au⁰ nanoparticles in sol-gel matrices for catalytic applications". The 15th Israeli-Russian Bi-National workshop, Ekaterinburg, Russia, Septembers 2016.
10. Ariela Burg (presenter), Inbar Elias, Dror Shamir, Lina Apelbaum, Yael Albo, Dan Meyerstein, "Entrapment of the Complex Cu-(2,5,8,11-tetramethyl-2,5,8,11-tetraazadodecane) in Sol-gel electrodes for Electrocatalysis". The 51th Annual Meeting of the Israel Institute of Chemical Engineers, June 2016.
11. Michael Meistelman, Yael Albo, Ariela Burg, Dror Shamir, Dan Meyerstein "Reductive dehalogenation of haloacetic acids catalyzed by Ag⁰-NPs incorporated in sol-gel matrices". The 81th Meeting of the Israel Chemical Society, Tel Aviv, Israel, February 2016.
12. Neelam Singh, Yael Albo, Ariela Burg, Dror Shamir, Dan Meyerstein, "Polyoxometalates entrapped in sol-gel matrices for reducing electron exchange column applications". The 81th Meeting of the Israel Chemical Society, Tel Aviv, Israel, February 2016.
13. Ariela Burg, Inbar Elias, Dror Shamir, Lina Apelbaum, Yael Albo, Dan Meyerstein, "Electrocatalysis by entrapped Cu(II)(2,5,8,11-tetramethyl-2,5,8,11-tetraaza-dodecane)²⁺ in sol-gel electrodes", Israel Electrochemistry Annual Meeting, Beer Sheva, 2015.
14. Yulia Katzman, Yael Albo, Dan Meyerstein, "Entrapment of Ag⁰ and Au⁰ NPs in SiO₂ matrices prepared via the sol-gel process and their catalytic role in the reduction of 4-nitrophenol". The 2nd EuCheMS Inorganic Chemistry Conference, Jerusalem, Israel, July 2013.
15. Yulia Katzman, Yael Albo, Dan Meyerstein, "Immobilization of noble metal nanoparticles in SiO₂ matrices and investigation of their chemical and catalytic properties". The 78th Meeting of the Israel Chemical Society, Tel Aviv, Israel, February 2013.
16. Stephanie Gottesman, Haim Cohen, Yael Albo, "Removal of polluting metal cations from water using a SiO₂ matrix entrapped ligand - N,N' di(2-hydroxy-4,6 di-tertbutyl-benzyl)

imidazolidine". The 4th EuCheMs Chemistry Congress Prague, Czech Republic, August 2012.

17. Stephanie Gottesman, Haim Cohen, Yael Albo, "Fixation of the ligand N, N' di(2-hydroxy-4,6 di-terbutyl-benzyl)imidazolidine in SiO₂ via the sol-gel matrix mediated synthesis for the purification of water from toxic trace elements". The 47th IChE Annual meeting, Tel Aviv, Israel, June 2011.
18. Yael Albo (presenter), Magal Saphier, Israel Zilbermann, Eric Maimon, Dan Meyerstein, "Design and synthesis of a new chelate for the uranyl ion". ICC38, Jerusalem, Israel, 2008.
19. Yael. Albo, Israel Zilbermann (presenter), Eric. Maimon, Haim Cohen and Dan Meyerstein "Mechanisms of oxidation of NiL²⁺ by inorganic radicals in aqueous solutions. A pulse radiolysis study". EYIC, Radiation Chemistry Meeting, Slubice, Poland, 2007.
20. Yael Albo, Magal Saphier, Israel Zilbermann, Eric Maimon, Dan Meyerstein, "Design and synthesis of a new chelate for the uranyl Ion". The 1st European Chemistry Congress, Budapest, Hungary, August 2006.
21. Yael Albo, Magal Saphier, Israel Zilbermann, Eric Maimon, Dan Meyerstein, "The Redox Chemistry of (N¹- [3-(2-aminoethylimino)-1,1 –dimethylbutyl]ethane-1,2-diamine)nickel(II) Perchlorate, Ni^{II}L¹(ClO₄)₂, in Aqueous Solutions – A Pulse Radiolytic and an Electrochemical Study". The Inorganic Reaction Mechanism Meeting, Athens, Greece, January 2004.
22. Yael Albo, Magal Saphier, Israel Zilbermann, Eric Maimon, Dan Meyerstein, "The Redox Chemistry of (N¹- [3-(2-aminoethylimino)-1,1–dimethylbutyl]ethane-1,2-diamine)nickel(II) Perchlorate, Ni^{II}L¹(ClO₄)₂, in Aqueous Solutions – A Pulse Radiolytic and an Electrochemical Study". The 69th Meeting of the Israel Chemical Society, Tel Aviv, Israel, February 2004.
23. Yael Albo, Magal Saphier, Israel Zilbermann, Eric Maimon, Dan Meyerstein, "A novel cyclam type ligand with pendant N- Hydroxo xylene moieties and its transition metal complexes". The ICC35, Heidelberg, Germany, July 2002.
24. Yael Albo, Magal Saphier, Israel Zilbermann, Eric Maimon, Dan Meyerstein, "A novel cyclam type ligand with pendant N-Hydroxo xylene moieties and its transition metal complexes". The 67th Meeting of the Israel Chemical Society, Jerusalem, Israel, February 2002.

CURRICULUM VITAE – Alina Shnaiderman Grago**PERSONAL DETAILS**

Name: Alina Shnaiderman Grago

Address: Rimon 69, Beer-Sheva, Israel

I.D.: 309068542

Date of birth: 08/02/83

Military service: 2001-2002, Air Force

Email: grego@post.bgu.ac.il

Mobile phone: 052-3407046

Work experience

2017: Nuclear Research Center Negev- R&D analytical chemistry

2015-2017: ICL Industrial Products- Scientific Research in the field of Electrochemistry and Physical Chemistry.

Education

2010-2015: Ph. D.

- Ph.D. through the combined program
- Name of advisor: Professor Ira A. Weinstock
- Title of thesis: " Self-assembly in nano-confined domains"

2008-2010: M. Sc.

- Ben-Gurion University of the Negev, Department of Chemistry
- Research subject: Inorganic chemistry of polyoxometalates
- Name of advisor: Professor Ira A. Weinstock

2005-2008: B. Sc.

- Ben-Gurion University of the Negev, Department of Chemistry .

Teaching Experience

Ben-Gurion University of the Negev:

- Laboratory instruction of under-graduate engineering students (General and Analytical Chemistry laboratory): 2008 – 2009
- Laboratory instruction of under-graduate laboratory medicine students (General and Analytical Chemistry laboratory): 2009

- Laboratory instruction of under-graduate chemistry students (Physical Chemistry laboratory): 2009 – 2015

Scholarships and Prizes

2010-2015 - Ph. D.:

- Kreitman Fellowship, Ben-Gurion university

2008-2010 - M. Sc.:

- Dean award for M. Sc. Students
- ‘Sharib’ award, from Mechtashim
- Summer scholarship for excellent students
- Magna Cum Laude

2005-2008 - B. Sc.:

- Department head award
- Magna Cum Laude

Professional skills

During my research work, I obtained knowledge and tools for characterizing materials and aqueous solutions using analytical instrument methods, as well as skills in inorganic synthesis of polyoxometalates and nanoparticles.

List of Publications Alina Grago

1. Ziv, A.; **Grego, A.**; Kopilevich, S.; Zeiri, L.; Miro, P.; Bo, C.; Müller, A.; Weinstock, I. A. “Flexible Pores of a Metal-Oxide-Based Capsule Permit Entry of Comparatively Larger Organic Guests” *J. Am. Chem. Soc.* 2009, 131, 6380-6382.
Highlights: Highlighted on the cover of the Journal (cover art), and in *Chemical & Engineering News*, *Chemistry World*, and *SpectroscopyNow.com*. See also, *JACS Image Challenge* and the first “enhanced” Cover-Art Podcast on *JACS Beta*.
2. Petina, O.; Rehder, D.; Haupt, E. T. K. **Grego, A.**; Weinstock, I. A. Merca, A.; Bögge, H.; Szakacs, J.; Müller, A. “Guests on Different Internal Capsule Sites Exchange with Each Other and with the Outside” *Angew. Chem. Int. Ed.* 2011, 50, 410-414.
3. **Grego, A.**; Müller, A.; Weinstock, I. A. “Stepwise-Resolved Thermodynamics of Hydrophobic Self-Assembly” *Angew. Chem. Int. Ed.* 2013, 52, 8358 –8362.

Highlights: Highlighted as a VIP article and on the inside-back cover of Ang. Chem. Int. Ed., Volume 52, Issue 32 (2013), by Vera Koester in a Chemistry Views article entitled, “First Stepwise Observation of Hydrophobic Self-Assembly” (July 1, 2013), and by Michael Gross in a Chemistry & Industry article entitled, “Pores for Thought” (October, 2013).

4. Somenath Garai, Hartmut Bögge, Alice Merca, Olga A. Petina, **Alina Grego**, Pierre Gouzerh, Erhard T. K. Haupt, Ira A. Weinstock, and Achim Müller, “Densely Packed Hydrophobic Clustering: Encapsulated Valerates Form a High-Temperature-Stable {Mo₁₃₂} Capsule System” Ang. Chem. Int. Ed. 2016, 55, 6634–6637.

Highlights: Highlighted on the front cover of the Journal 5. Manuscript in preparation: Entropically Driven Self-assembly of Alcohols in Water via Nano-Encapsulation.