

Name: Alex M. Szpilman

Date: 17. September 2021

CURRICULUM VITAE AND LIST OF PUBLICATIONS

• Personal Details

Name: Alex Martin Szpilman,

Address and Telephone number at work

Department of Chemical Sciences, Faculty of Natural Sciences

Office: 29B.4.15

Research Group Homepage: <https://www.amszpilman.net>

• Education

M.Sc.- 1992-1997, (5 year direct program) - Technical University of

Denmark (DTU) - Department of Organic Chemistry, w. Prof. John Nielsen

Ph.D. - 1998-2003 - Weizmann Institute of Science - Department of

Organic Chemistry - w. Prof. Mario D. Bachi

• Employment History

10/2021-present, Head of the Department of Chemical Sciences

11/2020-present, Vice Dean for Research Ariel University

11/2018-present, Associate Professor, Department of Chemical Sciences, Ariel University

1/3-2016 to 11/2018, Senior Lecturer, Department of Chemical Sciences, Ariel University

02/2017 to 09/2017, Adjunct Lecturer, Feinberg Graduate School, Weizmann Institute of Science

03/2009 to 02/2016, Senior Lecturer, Schulich Faculty of Chemistry Technion – Israel Institute of Technology

2003 to 02/2009, Postdoctoral Fellow, Laboratorium für Organische Chemie, ETH Zürich, Switzerland (w. Prof. Erick M. Carreira)

• Professional Activities

(a) Positions in academic administration (departmental, faculty and university)

10/2021-present, Head of the Department of Chemical Sciences

11/2020-present, Vice Dean for Research Ariel University

2019-present Teaching Committee, Department of Chemical Sciences

2016-present Organizing Committee for the Faculty of Natural Sciences Yearly Symposium

2016-present ISF Grant Workshops via the Ariel University Research Authority

2018-2021 Seminar Responsible, Department of Chemical Sciences

2019 University Research Steering Committee focusing on increasing our scientific ranking and obstacles (with Vice-President for Research Prof. Albert Pinhasov)

2017 New Building Planning Departmental Committee, (Department of Chemical Sciences Ariel University)

2010-2016 Academic Responsible for the Technion Chemical Store – (Technion)

2014 Represented the Technion at a formal Epidemiological Investigation into a tuberculosis case at the Technion, in conjunction with Rachel Globerman of the Ministry of Health.

2009-2012 - Seminar responsible (Dep. of Organic Chemistry, Technion)

(b) Professional functions outside universities/institutions

2022 Co-Organizer: “Asia-Europe International Meeting in Organic Chemistry” to be held 2/2022

2021 Scientific Committee member “ISySyCat 2021” 9/2021 Evora, Portugal.
<https://isysycat2021.events.chemistry.pt/>

2020 Session Chair for the Session “Organic and Organometallic Chemistry” at the 85th Israel Chemical Society Meeting, 18-19/2-2020

2019 Session Chair and Session Organizer for the session “Organic and Organometallic Chemistry” at the 84th Israel Chemical Society Meeting 12-13/2-2019, <https://ics2019.com/>

2017 Session Chair at the International Conference “ISySyCat” held 5-8/9-2017 Evora Portugal. <http://isysycat2017.eventos.chemistry.pt/>

2014 Session Chair for the session “Organic and Organometallic Chemistry” at the 79th Israel Chemical Society Meeting taking place 4-5/2-2014
<https://events.bizzabo.com/ICS79Meeting/agenda/speakers/65724>

2010 One of the initiators, together with Prof. Ilan Marek and Assoc. Prof. Mark Gandelman behind the “National Graduate Symposium in Organic Chemistry” Symposium Series that is now running for 10 years. Recently the meeting series has been renamed the “National Graduate Symposium in Chemistry” to include other chemical disciplines and is now being organized by the Graduate Student Division of the Israel Chemical Society

(f) Membership in professional/scientific societies

2001- present, The American Chemical Society

2000 - present, The Israel Chemical Society

1997-2018, The Royal Danish Society of Engineers

• Educational activities(a) Courses taught*Undergraduate Courses Taught:*Ariel University

4125710 “BioOrganic Chemistry for Biotechnology” (for Chemical Engineering students), Lecturer 2 hours/week, Fall 2019, Fall 2020, Fall 2021, Fall 2022

4120410 “Organic Chemistry 2” (for Chemical Engineering students), Lecturer 3 hours/week, Fall 2017, Fall 2018

4113210 “Organic Chemistry 1” (for Chemical Engineering students), Lecturer, 3 hours/week, Spring 2016, spring 2017, Spring 2018,

7223430 “Organic Chemistry Laboratory 2” (for Chemistry students), Lecturer, 4 hours/week, Fall 2016, Fall 2017

4121130 “Organic Chemistry Laboratory” (for Chemical Engineering students), 4 hours/week, Fall 2016, Fall 2018, Spring 2021

0410410 “Organic Chemistry” (for Nutrition students), Lecturer, 3 hours/week, Spring 2016, Spring 2017, Spring 2018, Spring 2020, Spring 2021

4010431 “Organic Chemistry Laboratory” (for Nutrition students), 2 hours/week, Spring 2016, Spring 2018

Technion

125802 “Organic Chemistry RBM (for med. Students)”, Lecturer, 4 hours lectures/week, Spring 2010, Spring 2011

124801 “Organic Chemistry 1b (for Bio-med Eng. Students)”, Lecturer, 2 hours lectures/week, Spring 2012, Spring 2013, Spring 2015

*Mixed Undergraduate and Graduate Courses Taught:*Ariel University

7293310 “Modern Organic Chemistry” Lecturer 2 hours/week, Fall 2017,
Fall 2019, Fall 2021

7293810 “Total Synthesis of Natural Products”, Lecturer, 2 hours/week,
Spring 2019

7290510 “Homogeneous Catalysis” Lecturer, 2 hours/week, Fall 2016, Fall
2018, Fall 2020

Weizmann Institute of Science

Modern Organic Synthesis, Spring 2017

Technion

126703 “Advanced Organic Chemistry 3” Lecturer, 3 hours lectures/week.
Fall 2009

126700 “Advanced Organic Chemistry” Subject: Organocatalysis
Spring 2015

127737 “Total Synthesis of Natural Products”, Lecturer, 3 hours
lectures/week

Fall 2010, Fall 2011, Fall 2013, Fall 2014, Fall 2015

126902 “Advanced Physical Organic Chemistry Laboratory”
Spring 2013

126901 “Advanced Organic Chemistry Laboratory”
Fall 2011, Fall 2013

Other teaching duties:

Ariel University

2018-2021, Seminar responsible, Dep. Of Chemical Sciences

Technion

2009-2012 (7 semesters) Seminar responsible, Dep. Of Organic Chemistry
Course: 128714, Seminar in Organic and Inorganic Chemistry, Course
responsible.

2009-2016, Teaching the Israeli Chemistry Olympic team, advanced
organic chemistry.

Design of New Courses:

Ariel University

4125710 “BioOrganic Chemistry for Biotechnology” (for Chemical Engineering students), Lecturer, 3 hours/week, Fall 2019

“Total Synthesis of Natural Products” (2018), Lecturer, 2 hours/week (Course approved, Course number to be assigned)

7293310 “Modern Organic Synthesis” (2017), Lecturer, 2 hours/week

7290510 “Homogeneous Catalysis” (2016), Lecturer, 2 hours/week

The Weizmann Institute of Science

201772222 “Modern Organic Synthesis” (2017), Lecturer, 3 hours/week

Technion

127737 “Total Synthesis of Natural Products”, Technion. Taught first time in fall 2009 under the temporary title 126703, “Advanced Organic Chemistry 3”

126700 “Advanced Organic Chemistry” New course module on the subject of “Organocatalysis” (2015).

Teaching Evaluations (Since 2012):

2012-2013

127737 Total Synthesis of Natural Products (3 hours lecture/week): 4.56 (75% responders)

124801 Organic Chemistry 1B (2 hours lecture/week): 3.25 (49% responders)

2013-2014

127737 Total Synthesis of Natural Products (3 hours lecture/week): 5.00 (67% responders)

2014-2015

127737 Total Synthesis of Natural Products (3 hours lecture/week): 4.52 (88% responders)

124801 Organic Chemistry 1B (2 hours lecture/week): 3.79 (53% responders).

2015-2016

127737 Total Synthesis of Natural Products (3 hours lecture/week): 4.13 (52%, 15/29 responders)

4113210 Organic Chemistry 1 (for Chem. Eng. students) 4.10, SD=1.02 (45.5%, 20/44 responders).

4010410 Organic Chemistry (for Nutrition students) 3.43, SD=0.98 (31.0%, 7/22 responders).

4010431 "Organic Chemistry Laboratory" (for Nutrition students), 3.5, SD=1.00 (30%, 4/13 responders)

2016-2017

7290510 Homogeneous Catalysis, 4.20 (71%, 5/7 responders)

7223430 Organic Chemistry Laboratory 2 (for Chemistry students), 4.00, SD=1.41 (80%, 4/5 responders)

4121130 Organic Chemistry 1 Laboratory (for Chem. Eng. students) 4.50, SD=0.58 (44.4%, 4/9 responders).

4113210 Organic Chemistry 1 (for Chem. Eng. students) 3.74 (35.2%, 19/54 responders).

4010410 Organic Chemistry (for Nutrition students) 4.43 (35.0%, 7/20 responders).

201772222 "Modern Organic Synthesis" (Weizmann Institute of Science), 4.09 (92%, 11/12 responders)

2017-2018

7293310 "Modern Organic Synthesis" 5.0, SD=0.0 (60%, 3/5 responders)

4120410 "Organic Chemistry 2" (For Chem. Eng. Students) 3.74, SD=0.96 (67% 23/34 responders)

7223430 Organic Chemistry Laboratory 2 (for Chemistry students), 4.25, SD=1.50 (44%, 4/9 responders)

4113210 Organic Chemistry 1 (for Chem. Eng. students) 3.08, SD=1.4 (72%, 40/55 responders). Note high SD.

4012510 Organic Chemistry (for Nutrition students) 2.95, SD=1.24 (80.0%, 21/26 responders). Note high SD.

4012532 "Organic Chemistry Laboratory" (for Nutrition students), 3.82, SD=0.75 (78%, 11/14 responders)

2018-2019

7290510 "Homogeneous Catalysis" 5.0, SD=0.0 (22%, 2/9 responders)

4120410 "Organic Chemistry 2" (For Chem. Eng. Students) 3.05, SD = 1.24. (15 students attended lectures and took the exam, 21 gave an evaluation. Note the high SD)

4121130 Organic Chemistry Laboratory (for Chem. Eng. students), 4.46, SD=0.78 (44%, 4/9 responders)

4012510 “Organic Chemistry” (for Nutrition students), 4.05, SD=0.79
(75%, 22/29 responders)

4012532 “Organic Chemistry Laboratory” 4.17, SD=0.75 (75%, 6/8
responders)

7293810 “Total Synthesis of Natural Products” 5.00, SD=0.0 (30%, 3/10
responders)

2019-2020

7293310 “Modern Organic Chemistry” (0%, 0/6 responders)

4125710 “BioOrganic Chemistry for Biotechnology” (For Chem. Eng.
Students), 3.11, SD=1.2 (54%, 19/35 responders)

4121130 Organic Chemistry Laboratory (for Chem. Eng. students), 5.0,
SD=0 (66.67%, 10/15 responders)

4012510 “Organic Chemistry” (for Nutrition students, By Zoom), 2.06,
SD=1.0 (62% , 18/29 responders)

7223210 “Spectroscopic Methods and Instruments in Chemistry” (for
Chemistry students, by Zoom), 5.0, SD=N/A (20%, 1/5 responders)

2020-2021 (by mostly Zoom due to the Corona Pandemic)

7290510 “Homogeneous Catalysis” 5.0, SD=0 (66.67%, 2/3 responders)

4125710 “BioOrganic Chemistry for Biotechnology” (For Chem. Eng.
Students, by zoom), 3.92, SD=1.18 (60%, 24/39 responders)

4121130 Organic Chemistry Laboratory (for Chem. Eng. students), 4.88,
SD=0.35 (80%, 8/10 responders)

4012510 “Organic Chemistry” (for Nutrition students, first half Zoom, but
only 12 students participated in frontal lectures, the rest only by zoom),
2.65, SD=1.34 (39%, 23/58 responders, Note the high SD)

7223210 “Spectroscopic Methods and Instruments in Chemistry” (for
Chemistry students, by Zoom), 5.0, SD=0.0 (43%, 3/7 responders, Note that
only these 3 students participated in the lectures, the other four never
connected)

(b) Research students

Completed Theses

Ph. D.

Technion

Shlomit Avidan, 2015 Thesis: *Design and Analysis in Asymmetric Catalysis*

Michal Amar, 2015, Schulich Fellowship, *Thesis: Novel Stable α -Hydrogen Nitroxyl Radicals: Design and Synthesis*

Orel Svetlana Schneider, 2015, Thesis: *Oxidative Umpolung Alkylation of Ketones*

Irit Cohen, 2018 (jointly with Assoc. Prof. Yoav Eichen, Technion), *Photo-Assisted Amidation Using Charge-Transfer Complexes: Direct Photo Amidation of Carboxylic Acids*

Hila Toledo 2018, *Novel Design and Applications of Nitroxyl Radicals*

Shimon Maksymenko 2019, *Development and Application of Umpolung α -Arylation of Carbonyl Compounds*

Shlomy Arava 2020, *Development of Umpolung Baylis-Hillman Reactions*

Ariel

Lenin Kumar Verdhi (2021), *Novel Chiral α -Hydrogen Substituted Nitroxide Catalyzed Enantioselective Oxidations*

M.Sc.

Technion

Kate Tishin, 2013, *Thesis: Studies Towards a Total Synthesis of Gelsemine*

Hila Toledo, 2013 *Thesis: Organocatalytic oxidation of Aldehydes to Esters and Amides*

Evgeni Piseravsky, 2013 *Thesis: Discovery and Design in Oxidative Chemistry*

Tom Targel, 2015, *Asymmetric Umpolung Alkylation of Evans' β -ketoimides*

Tal Shvartzfeld, 2016, *Hydrogen Storage with Boranes*

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Theses in Progress

M.Sc. (expected completion year)

Ariel University

Raz Strugano (2022)

Ph.D. (expected completion year)

Ariel University

Yuriy Lipisa (2021), *Development of Umpolung C-C bond formation,*

Raja Kapanaiyah (2023), *Umpolung Reactions of Esters, Amides and Imides*

Yonatan Rachamim (2025)

Ortal Dorfmann (2025)

Abhijit Kashid (2025)

Postdoctoral Fellows

Technion

2009 (six months) Dr. Adi Abramowicz, *Organocatalytic Oxidative Dimerization of Alcohols*

2011-2013 Dr. Harisadhan Ghosh, Schulich Postdoctoral Fellow, *Asymmetric Catalysis*

2012-2014 Dr. Ravishashidhar Vavilala, *Asymmetric Catalysis*

2012-2014 Dr. Sukanta Bar, Schulich Postdoctoral Fellow, *Nitroxyl Radicals and Umpolung*

2013-2016 Dr. Jayprakash N. Kumar, Schulich Postdoctoral Fellow, *Nitroxyl Radicals and Umpolung*

2017-2019 Dr. Abhaya K. Mishra *Solar Assisted Synthesis*, Jointly with Prof. Yoav Eichen

Ariel University

2016-2018 Dr. Keshaba N. Parida, *Umpolung Chemistry*

2018-2018 Dr. Ishita Neogi, *Borazine Energetic Materials*

2016-2019 Dr. Gulab Pathe, *Umpolung Chemistry*

2016-2019 Dr. Atul A. More, *Umpolung Chemistry*

2017-2020 Dr. Sourav K. Santra, *Nitroxide and Solar Light Photochemistry*

2021-present Dr. Asit Ghosh

2021-present Dr. Subrata Maity

2021-present Dr. Lenin K. Verdhi

Exchange and undergraduate students

Ariel University

Shelly Paxton

Angelika G.

Technion

Enrico Fantoni, Imperial College London, UK

Alon Shapira, Technion – Israel Institute of Technology

Ma'ayan Hirsch, Technion – Israel Institute of Technology

Sabrina Batke, IMB-Mainz, Germany

• **Awards, Citations, Honors, Fellowships**

(a) Honors, Citations, Awards (including during studies)

- 2016 **Queen’s University, Belfast, UK (Times Higher Education world ranking 200)** - offered a position as a *Senior Lecturer* (permanent position), offer declined
- 2015 15th EMFC-AMFC conference - **“Thieme Poster Award”**
- 2014 Justus Liebig University Giessen, Germany **“Justus Liebig – College Visiting Professor”**
- 2010-2012 Technion - Incumbent of the two-year **“Chaya Career Advancement Chair”**

(b) Fellowships (e.g. Fullbright)

- 2002 Technical University of Denmark –“The Frants Alling Scholarship”
- 2002 Technical University of Denmark – “Otto Mønsted Scholarship”
- 1999-2002 Feinberg Graduate School, the Weizmann Institute of Science - “Ph.D. Scholarship of excellence”
- 1998 Danish-Israeli Study Scholarship in memory of Josef and Regine Nachemson

• Scientific Publications

Corresponding author is indicated by *. Citations and journal H-indexes are from Google Scholar. Impact Factors and Q Rankings are from the ISI Journal Citation Report.

H-Index: 21 (Google Scholar), 19 (ISI), 19 (Scopus).

i10 index: 25 (Google Scholar)

Total Citations: Google Scholar: 1279 (1192 without self-citations) Web of Science/ISI: 864 (777 without self-citations), Scopus 911. ISI does not include citations of or in books and theses.

Average citations per paper: 31 (Google Scholar), 23 (ISI)

Link to Google Scholar page:

<https://scholar.google.co.il/citations?user=TPUqDcMAAAAJ&hl=en>

Authored books**d) Books Chapters**

1. "Cycloadditions"

Alex M. Szpilman* and Erick M. Carreira* in *Silver in Organic Synthesis* Ed. Michael Harmata, Wiley, 41 pages **2010**

DOI: <http://dx.doi.org/10.1002/9780470597521.ch2>

This book was given an honorable mention for the [2010 Prose Awards](#)

Highlighted in: [ChemInform](#)

2. "The Application of Nitroxides in Synthesis"

Linin Kumar and Alex M. Szpilman* in *Nitroxides*. Eds. Olivier Ouari, Didier Gimes RSC. **2021, In Press**

Articles(a) Refereed articles and refereed letters in scientific journals**Pre- and Postdoctoral Publications**

1.

"The Synthesis and Reactions of Antimalarial Endoperoxides" Mario D. Bachi*, Edward E. Korshin, Roland Hoos and **Alex M. Szpilman**

Journal of Heterocyclic Chemistry, **2000**, 37, 639-646

DOI: <http://dx.doi.org/10.1002/jhet.5570370321>

Highlighted in: [Cheminform](#)

Journal Info: IF 2.193, Q3, Ranked 33/57 in Organic Chemistry, H-Index: 15 (GS)

2.

“The Iron(II)-Induced Cleavage of β -Sulfonyl Endoperoxides. Evidence for the Generation of Potentially Cytotoxic Carbocations”

Alex M. Szpilman, Edward E. Korshin, Roland Hoos, Gary H. Posner and Mario D. Bachi*,

The Journal of Organic Chemistry, **2001**, 66, 6531-6540

DOI: <http://dx.doi.org/10.1021/jo001265z>

Highlighted in: [Cheminform](#)

Journal Info: IF 4.805, Q1, Ranked 8/59 in Organic Chemistry, H-Index: 73 (GS)

3.

“An Efficient Synthesis of Bridged Bicyclic Peroxides Structurally related to Antimalarial Yingzhaosu A based on a Radical Co-Oxygenation of Thiols and Monoterpenes”

Edward E. Korshin, Roland Hoos, **Alex M. Szpilman**, Leonid Konstantinovski, Gary H. Posner and Mario D. Bachi*,

Tetrahedron, **2002**, 58, 2449-2469

DOI: [http://dx.doi.org/10.1016/S0040-4020\(02\)00126-6](http://dx.doi.org/10.1016/S0040-4020(02)00126-6)

Journal Info: IF 2.457, Q2, Ranked 27/57 in Organic Chemistry, H-Index: 50 (GS)

Highlighted in: [Cheminform](#)

4.

“A Short Synthesis and Biological Evaluation of Potent and Nontoxic Antimalarial Bridged Bicyclic β -Sulfonyl-Endoperoxides”

Mario D. Bachi*, Edward E. Korshin, Roland Hoos, **Alex M. Szpilman**, J. N. Cumming, P. Ploypradith, S. J. Xie, Theresa A. Shapiro, and Gary H. Posner,

Journal of Medicinal Chemistry, **2003**, 46, 2516-2533

DOI: <http://dx.doi.org/10.1021/jm020584a>

Journal Info: IF 7.446, Q1, Ranked 3/63 in Medicinal Chemistry, H-Index: 81 (GS)

5.

“Total Syntheses of Yingzhaosu A and its C(14)-Epimer including the First Evaluation of their Antimalarial and Cytotoxic Activities”

Alex M. Szpilman, Edward E. Korshin, Haim Rozenberg and Mario D. Bachi*,
The Journal of Organic Chemistry, **2005**, *70*, 3618-3632

DOI: <http://dx.doi.org/10.1021/jo050074z>

Highlighted in: [Cheminform](#)

Journal Info: IF 4.805, Q1, Ranked 8/59 in Organic Chemistry, H-Index: 73 (GS)

6.

“Scalable Synthesis of a Mycosamine Donor. Overcoming Difficult Reactivity in Allose Systems”

Jeffrey M. Manthorpe, **Alex M. Szpilman** and Erick M. Carreira*,

Synthesis **2005**, (*Special Steven Ley Issue*) 3380-3388

DOI: <http://dx.doi.org/10.1055/s-2005-918474>

Journal Info: IF 3.157, Q2, Ranked 21/59 in Organic Chemistry, H-Index: 41 (GS)

7.

“Synthesis of 35-Deoxy Amphotericin B Methylene Ester: A Strategy for Molecular Editing”

Alex M. Szpilman, Damiano M. Cereghetti, Nicholas R. Wurtz, Jeffrey M. Manthorpe and Erick M. Carreira*,

Angewandte Chemie International Edition, **2008**, *47*(23), 4335-4338.

DOI: <http://dx.doi.org/10.1002/anie.200800589>

Journal Info: IF 15.336, Q1, Ranked 16/179 in Multidisciplinary Chemistry, H-Index: 196 (GS)

Named a “HOT Paper” by the editors.

Highlighted in: [Philip Kocienski, Arndt W. Schmidt *Synfacts* 2008, 12, 1245-1245.](#)

8.

“Synthesis and Biological Studies of 35-Deoxy-Amphotericin B Methyl Ester” **Alex M.**

Szpilman, Jeffrey M. Manthorpe and Erick M. Carreira*,

Angewandte Chemie International Edition, **2008**, *47*(23), 4339-4342

DOI: <http://dx.doi.org/10.1002/anie.200800590>

Journal Info: IF 15.336, Q1, Ranked 16/179 in Multidisciplinary Chemistry, H-Index: 196 (GS)

Named a “HOT Paper” by the editors.

Highlighted in: [Philip Kocienski, Arndt W. Schmidt *Synfacts* 2008, 12, 1245-1245.](#)

9.

“ β -Glycosidation of Sterically Hindered Alcohols”

Alex M. Szpilman and Erick M. Carreira*

Organic Letters **2009**, *11*(6), 1305-1307

DOI: <http://dx.doi.org/10.1021/o19000735>

Journal Info: 6.005, Q1, Ranked 6/57 in Organic Chemistry (highest ranked original research journal), H-Index: 88 (GS)

Highlighted in: [Cheminform](#)

10.

“Synthesis and Biophysical Studies on 35-Deoxy-Amphotericin B Methyl Ester”

Alex M. Szpilman, Damiano M. Cereghetti, Jeffrey M. Manthorpe, Nicholas R. Wurtz and Erick M. Carreira*,

Chemistry a European Journal **2009**, *15*(29), 7117 - 7128

DOI: <http://dx.doi.org/10.1002/chem.200900231>

Journal Info: IF 5.236, Q2, Ranked 52/179 in Multidisciplinary Chemistry, H-Index: 92 (GS)

11.

“50 years of Synthesis and Biological Evaluation of Amphotericin B Derivatives: A Review”

Astrid A. Volmer, **Alex M. Szpilman** and Erick M. Carreira*

Natural Product Reports **2010**, *27*, 1329-1349

DOI: <http://dx.doi.org/10.1039/B820743G>

Journal Info: IF 13.423, Q1, Ranked 1/57 in Organic chemistry, H-Index: 56 (GS)

Independent Publications 2010-present (as PI*)

12.

“Probing the Biology of Natural Products: Molecular Editing by Diverted Total Synthesis”

Alex M. Szpilman* and Erick M. Carreira*,

Angewandte Chemie International Edition, **2010**, *49*, 9592–9628DOI: <http://dx.doi.org/10.1002/anie.200904761>

Journal Info: IF 15.336, Q1, Ranked 16/179 in Multidisciplinary Chemistry, H-Index: 196 (GS)

Highlighted in: [ChemInform](#) and [ChemistryViews](#)

13.

“Organocatalytic Oxidative Dimerization of Alcohols to Esters”

Adi Abramovich, Hila Toledo, Evgeni Pisarevsky and Alex M. Szpilman*

Synlett, **2012**, *23*, 2261-2265DOI: <https://dx.doi.org/10.1055/s-0032-1317018>

Journal Info: IF 2.454, Q2, Ranked 28/57 in Organic Chemistry, H-Index: 32 (GS)

Highlighted in: [ChemInform](#)

14.

“Organocatalytic Oxidation of Aldehydes to Mixed Anhydrides”

Hila Toledo, Evgeni Pisarevsky, Adi Abramovich and Alex M. Szpilman*

Chemical Communications, **2013**, *49*, 4367-4369DOI: <http://dx.doi.org/C2CC35220F>*Selected for inclusion in the 2013 Young Investigator Issue after peer-review*

Journal Info: IF 6.222, Q1, Ranked 44/179 in Multidisciplinary Chemistry, H-Index: 137 (GS)

Highlighted in: [ChemInform](#)

15.

“Organometallic Complexes of Vanadium”

Orel S. Shneider and Alex M. Szpilman*

Science of Synthesis, **2014**, *Knowledge Updates vol. 2*, 139-165.<http://dx.doi.org/10.1055/sos-SD-102-00439>

Journal Info: Not indexed by ISI

16.

“Synthetic and Mechanistic study of the Catalytic Enantioselective Synthesis of primary β -Amino Ketones from Enones and a Fluorinated Gabriel Reagent”

Shlomit Avidan-Shlomovich, Harisadhan Ghosh and **Alex M. Szpilman***

ACS Catalysis, **2015**, 5, 336-342

DOI: <http://dx.doi.org/10.1021/cs501744e>

Journal Info: IF 13.721, Q1, Ranked 15/162 in Physical Chemistry), H-Index: 88 (GS)

17.

“Synthesis of Axially Chiral 1,8-Diarylnaphthalene Ligands and Application in Asymmetric Catalysis - An Intriguing Fluorine Effect”

Harisadhan Ghosh, Ravishashidhar Vavilala and **Alex M. Szpilman***

Tetrahedron; Asymmetry, **2015**, 26, 79-84

DOI: <http://dx.doi.org/10.1016/j.tetasy.2014.12.008>

Journal Info (Journal discontinued last data is from 2016): IF 2.126, Q2, Ranked 29/59 in Organic Chemistry, H-Index: 23 (GS)

This article was one of the most downloaded papers from the Journal during February to May 2015

18.

“Oxidative Umpolung α -Alkylation of Carbonyl Compounds”

O. Svetlana Shneider, Evgeni Pisarevsky, Peter Fristrup and **Alex M. Szpilman***

Organic Letters **2015**, 17, 282-285

DOI: <http://dx.doi.org/10.1021/ol503384c>

Journal Info: 6.005, Q1, Ranked 6/57 in Organic Chemistry (highest ranked original research journal), H-Index: 88 (GS)

Highlighted in: [Paul Knochel, Jeffrey M. Hammann *Synfacts* 2015, 11, 303.](#)
and in [ChemInform](#)

Chosen as TCI-Chemicals “[Paper of the Week](#)” for 25. May to 1 June 2015

19.

“Oxidative Asymmetric Umpolung Alkylation of Evans’ β -Keto Imides by Dialkylzinc”

Tom Targel, Jayprakash N. Kumar, O. Svetlana Shneider, Sukanta Bar, Natalia Fridman, Shimon Maximenko, and **Alex M. Szpilman***

Organic & Biomolecular Chemistry **2015**, 13, 2546-2549

DOI: <http://dx.doi.org/10.1039/C4OB02601B>

Journal Info: IF 3.876, Q1, Ranked 13/57 in Organic Chemistry, H-index: 58 (GS)

Named a **HOT Paper**

Highlighted in [ChemInform](#)

20.

“Design Concept for α -Hydrogen Substituted Nitroxyl Radicals“

Michal Amar, Sukanta Bar, Mark A. Iron, Hila Toledo, Boris Tumanskii, Linda J. W. Shimon, Mark Botoshansky, Natalia Fridman and **Alex M. Szpilman***

Nature Communications, **2015**, 6, 6070

DOI: <http://dx.doi.org/10.1038/ncomms7070>

Journal Info: IF 14.919, Q1, Ranked 4/64 in Multidisciplinary Science, H-index: 201 (GS)

21.

“Catalytic Activity of Recoverable IAPNO α -Hydrogen Nitroxyl Radicals in the Aerobic Oxidation of Alcohols”

Sukanta Bar, Jayprakash N. Kumar, Michal Amar, Hila Toledo, Rami J. Batrice and **Alex M. Szpilman***

ChemCatChem **2015**, 7, 1129-1135

DOI: <http://dx.doi.org/10.1002/cctc.201402985>

Journal Info: IF 5.686, Q2, Ranked 50/162 in Physical Chemistry, H-index: 52 (GS)

22.

“Synthesis and Stability of α -Hydrogen Nitroxides “

Hila Toledo, Michal Amar, Sukanta Bar, Mark A. Iron, Boris Tumanskii, Natalia Fridman, Linda J. W. Shimon, Mark Botoshansky, and **Alex M. Szpilman***

Organic & Biomolecular Chemistry, **2015**, 13, 10726 - 10733

DOI: <http://dx.doi.org/10.1039/C5OB01443C>

Named a **HOT Paper**

Journal Info: IF 3.876, Q1, Ranked 13/57 in Organic Chemistry, H-index: 58 (GS)

23.

“Novel water-soluble amphotericin B-PEG conjugates with reduced low toxicity and potent in vivo efficacy”

Asaf Halperin, Yana Shadkchan, Evgeni Pisarevsky, **Alex M. Szpilman**,* Hannah Sandovsky, Nir Osherov,* Itai Benhar*

Journal of Medicinal Chemistry, **2016**, *59*, 1197-1206

DOI: <http://dx.doi.org/10.1021/acs.jmedchem.5b01862>

Journal Info: IF 7.446, Q1, Ranked 3/63 in Medicinal Chemistry, H-Index: 81 (GS)

24.

“Mechanism of the Copper/TEMPO Catalyzed Aerobic Oxidation of Alcohols “

Mark A. Iron and **Alex M. Szpilman***

Chemistry a European Journal, **2017**, *23*, 1368-1378

DOI: <http://dx.doi.org/10.1002/chem.201604402>

Named a **HOT Paper**

Journal Info: IF 5.236, Q2, Ranked 52/179 in Multidisciplinary Chemistry, H-Index: 92 (GS)

25.

“Enolonium Species – Umpoled Enolates “

Shlomy Arava, Jayprakash N. Kumar, Shimon Maksymenko, Mark A. Iron, Keshaba N. Parida, and **Alex M. Szpilman***

Angewandte Chemie International Edition, **2017**, *56*, 2599-2603 (**ISI Highly Cited paper Sep. 2017-May 2018**)

DOI: <http://dx.doi.org/10.1002/anie.201610274>

Angewandte Chemie, **2017**, *129*, 2643-2647 (German version)

DOI: <http://dx.doi.org/10.1002/ange.201610274>

Journal Info: IF 15.336, Q1, Ranked 16/179 in Multidisciplinary Chemistry, H-Index: 196 (GS)

26.

“Solar Assisted Direct Amide Formation via a Charge-Transfer Complex ”

Irit Cohen, Abhay K. Mishra, Galit Parvari, Rachel Edrei, Mauricia Dantus, Yoav Eichen, and **Alex M. Szpilman***

Chemical Communications, **2017**, *53*, 10128-10131

DOI: <http://dx.doi.org/10.1039/C7CC05300B>

Journal Info: IF 6.222, Q1, Ranked 44/179 in Multidisciplinary Chemistry, H-Index: 137 (GS)

27.

“Transition Metal-Free Intermolecular α -Arylation of Ketones via Enolonium Species”Shimon Maksymenko, Keshaba N. Parida, Gulab K. Pathe, Atul A. More, Yuriy B. Lipisa, and **Alex M. Szpilman****Organic Letters*, **2017**, *19*, 6312-6315

Downloaded >1000 times in the first month after publication.

DOI: <http://dx.doi.org/10.1021/acs.orglett.7b03064>

Journal Info: 6.005, Q1, Ranked 6/57 in Organic Chemistry (highest ranked original research journal), H-Index: 88 (GS)

28.

“ α -N-Heteroarylation and α -Azidation of Ketones via Enolonium Species”Atul A. More, Gulab Pathe, Keshaba N. Parida, Shimon Maksymenko, Yuriy B. Lipisa, and **Alex M. Szpilman****The Journal of Organic Chemistry*, **2018**, *83*, 2442–2447DOI: <http://dx.doi.org/10.1021/acs.joc.7b03058>

Journal Info: IF 4.354, Q1, Ranked 12/57 in Organic Chemistry, H-Index: 73 (GS)

29.

“Cross-Coupling of Dissimilar Ketone Enolates via Enolonium Species to afford Non-symmetrical 1,4-Diketones”

Keshaba N. Parida, Gulab Pathe, Shimon Maksymenko, and **Alex M. Szpilman****Beilstein Journal of Organic Chemistry*, **2018**, *14*, 992–997*(Invited Contribution to the Special Issue on Hypervalent Iodine in Synthesis)*DOI: <https://www.doi.org/10.3762/Fbjoc.14.84>

Journal Info: IF 2.883, Q2, Ranked 23/57 in Organic Chemistry, H-Index: 73 (GS)

30.

“A Two-step Protocol for Umpolung Functionalization of Ketones via Enolonium Species”

Shimon Maksymenko, Shlomy Arava, Keshaba N. Parida, Atul A. More, Gulab Pathe, Yuriy B. Lipisa, and **Alex M. Szpilman****J. Vis. Exp.* **2018**, (138), e57916DOI: <https://www.doi.org/10.3791/57916>

Journal Info: IF 1.355, Q3, Ranked 49/73 in Multidisciplinary Sciences, H-Index: 42 (GS)

31.

“Amine-Tetrachloromethane Charge Transfer Complexes – a Structural and Computational Study”

Galit Parvari, Abhay K. Mishra, Irit Cohen, Natalia Fridman Yoav Eichen, **Alex M. Szpilman***

Journal of Coordination Chemistry, **2018**, *71*, (special issue in honor of Prof. Dan Meyerstein’s 80th Birthday), 2082-2089

DOI: <https://doi.org/10.1080/00958972.2018.1498085>

Journal Info: IF 1.751, Q3, Ranked 26/45 in Chemistry, Inorganic and Nuclear, H-Index: 22 (GS)

32.

“First α -Deuterium Nitroxides; Synthesis and EPR Study”

Hila Toledo, Boris Tumanskii*, Dennis S. Sibarov, Alexander Khaushanskyu, Natalia Fridman, and **Alex M. Szpilman***

Organic & Biomolecular Chemistry, **2019**, *17*, 7900-7906

DOI: <https://pubs.rsc.org/en/content/articlelanding/2019/ob/c9ob01127g>

Journal Info: IF 3.876, Q1, Ranked 13/57 in Organic Chemistry, H-index: 58 (GS)

33.

“Azido-Enolonium Species in C-C and C-N Bond Formation”

Atul A. More, Sourav K. Santra and **Alex M. Szpilman***

Organic Letters **2020**, *21*, 768-771

DOI: <http://dx.doi.org/10.1021/acs.orglett.9b03824>

Journal Info: 6.005, Q1, Ranked 6/57 in Organic Chemistry (highest ranked original research journal), H-Index: 88 (GS)

34.

Indium(III) Catalyzed Reactions of Vinyl Azides and Indoles

Atul A. More, and **Alex M. Szpilman***

Organic Letters **2020**, *21*, 3759-3764

DOI: <https://pubs.acs.org/doi/10.1021/acs.orglett.0c00919>

Journal Info: 6.005, Q1, Ranked 6/57 in Organic Chemistry (highest ranked original research journal), H-Index: 88 (GS)

35.

“Direct Umpolung Morita-Baylis-Hillman like α -Functionalization of Enones via Enolonium Species”

Shlomy Arava, Sourav K. Santra, Gulab K. Pathe, Raja, Kapaniah, and **Alex M. Szpilman***

Angewandte Chemie International Edition, **2020**, 59, 15171-15175.

DOI: <https://onlinelibrary.wiley.com/doi/10.1002/anie.202005286>

Named a **HOT Paper**

Journal Info: IF 15.336, Q1, Ranked 16/179 in Multidisciplinary Chemistry, H-Index: 196 (GS)

36.

“Visible-Spectrum Solar-Light-Mediated Benzylic C–H Oxygenation Using 9,10-Dibromoanthracene As an Initiator”

*Sourav K. Santra, and Alex M. Szpilman

The Journal of Organic Chemistry, **2021**, 86, 1164–1171

DOI: <https://pubs.acs.org/doi/10.1021/acs.joc.0c01720>

Journal Info: IF 4.354, Q1, Ranked 12/57 in Organic Chemistry, H-Index: 73 (GS)

37.

“Solar and Visible Light Assisted Peptide Coupling”

Abhaya K. Mishra, Galit Parvari, Sourav K. Santra, Andrii Bazyletich, Ortal Dorfman, Jonatan Rahamin, Yoav Eichen* and **Alex M. Szpilman***

Angewandte Chemie International Edition, **2021**, 60, 12406-12412

DOI: <https://onlinelibrary.wiley.com/doi/10.1002/anie.202011510>

Named a **HOT Paper**

Journal Info: IF 15.336, Q1, Ranked 16/179 in Multidisciplinary Chemistry, H-Index: 196 (GS)

• Lectures and Presentations at Meetings and Invited Seminars not Followed by Published Proceedings

- (a) Invited plenary lectures at conferences/meetings
- (b) Presentation of papers at conferences/meetings (oral or poster)

Invited Lectures at Conferences (Author in all cases: Alex M. Szpilman):

1. “Creativity and Design in Oxidative Synthetic Chemistry” Symposium in Honor of Prof. Erick M. Carreira, 5 July 2013, ETH Zürich, Invited Lecture
2. “New Paradigms in the Design and Application of Nitroxide Organocatalysts” 4th Young Investigator Workshop, EuCheMs-Organic Division 23-25, Vienna August 2012, Invited as Israeli representative
3. “New Paradigms in the Design and Application of Nitroxide OrganoCatalysts” The 77th meeting of the Israeli Chemical Society, Tel Aviv, Israel, 7. February 2012. Invited Lecture
4. “Making the Elusive Tangible in Organic Synthesis” Tianjin University Symposium on Directions in Modern Health Science, Tianjin University China, 22-25 November 2015, invited lecture.
5. “Powerful New Chemical Reactivity and its Application to Synthetic Chemistry, Green Catalysis and Medicinal Compounds” 2nd Ariel University Interdisciplinary Natural Sciences Symposium, 5. November 2017, invited lecture
6. “Borazine Energetic Materials, MAFAT Yearly Symposium, 27. November 2018, Tel Aviv, invited lecture
7. “TBA|” The Batsheva de Rothschild Seminar on Strong Bond Activation, Dead Sea October 11-14, 2022

Contributed lectures at conferences (Author in all cases: Alex M. Szpilman):

1. “Synthesis of Bicyclic Endoperoxides: Yingzhaosu A and its C-14 Epimer” The 224th meeting of the American Chemical Society in Boston, USA, 2002
2. “Total Synthesis as a Tool for Elucidating the Mechanism of Action of Amphotericin B” The 71st meeting of the Israeli Chemical Society, Tel Aviv, Israel, February 2006
3. “Synthetic Strategy for Molecular Editing of Amphotericin B: Synthesis and Biological Studies of 35-Deoxy-Amphotericin Methyl Ester” The 224th meeting of the American Chemical Society in Philadelphia, USA, 19. August 2008.

4. "Design and Catalytic Activity of Nitroxide Organocatalysts" 4th EuCheMs Conference Prague 26-30. August 2012
5. "Creativity and Design in Oxidative Synthetic Chemistry" The 79th meeting of the Israeli Chemical Society, Tel Aviv, Israel, 4-5 February 2014
6. "A Novel Design Concept For and Catalytic Activity of Stable Nitroxyl Radicals" Euchems Conference On Organic Free Radicals, Prague 29. June- 4. July 2014
7. "Preparation And Characterization of Elusive Iodo(III)Enolates and their use in C-C bond Forming Reactions" The 81st meeting of the Israeli Chemical Society, Tel Aviv, Israel, February 2016
8. "Characterization and Use of the Elusive Iodo(III)-enolates" 5th International Conference on Hypervalent Iodine Chemistry (ICHIC 2016), July 3-6, 2016, Les Diablerets, Switzerland
9. "Powerful C-C and C-N Bond Forming Reactions via Enolonium Species" International Symposium on Synthesis and Catalysis, Evora, Portugal 4-8. September 2017
10. "Powerful New Umpolung C-C and C-N Bond Forming Reactions via Enolonium Species" The 83rd meeting of the Israeli Chemical Society, Tel Aviv, Israel, February 2018
11. "Charge-Transfer Complexes as a Linchpin for Transition Metal-Free Solar Light Assisted Synthesis " EuCheMS conference on Organic Free Radicals June 17-20, 2018 Marseille, France
12. "A Plethora of Ketone α -Functionalization Reactions via Enolonium Species" 6th International Conference on Hypervalent Iodine Chemistry (ICHIC 2018) July 1-4, 2018, Cardiff, Wales, United Kingdom
13. "Novel Reactions Via Electrophilic Enolonium Species" European Symposium on Organic Chemistry, July 14-18, Vienna, Austria
14. "Visible Spectrum Solar Light Mediated Peptide Coupling and C-H activation" International Symposium on Synthesis and Catalysis, Evora, Portugal 3-6. September 2019

Conference Posters:

1. The 66th meeting of the Israeli Chemical Society, Tel Aviv, Israel, 2001:
 - “An Efficient Total Synthesis of Yingzhaosu A, a Naturally Occurring Antimalarial Endoperoxide” A. M. Szpilman, E. E. Korshin, M. D. Bachi*
2. The 71st meeting of the Israeli Chemical Society, Tel Aviv, Israel, February 2006:
 - “Synthesis of a Mycosamine Donor Bearing a Novel Auxiliary for β -Glycosidation” A. M. Szpilman, J. M. Manthorpe, E. M. Carreira*
3. European Society of Organic Chemistry 2011 Conference, Cyprus, July 2011:
 - “Organocatalytic Direct Synthesis of Esters from Alcohols and Aldehydes” H. Toledo, A. Abramovich, E. Piseravsky, A. M. Szpilman*
4. 77th Annual meeting of the Israel Chemical Society, February 2012 (2 posters):
 - a) “Organocatalytic Direct Synthesis of Esters from Alcohols and Aldehydes” H. Toledo, A. Abramovich, E. Piseravsky, A. M. Szpilman*
 - b) “Towards Novel Chiral Nitroxide Compounds” M. Amar, A. M. Szpilman*
5. 78th Annual meeting of the Israel Chemical Society, February 2013:
 - “Alkylation via a Novel Umpolung Reaction” O. S. Shneider, E. Piseravsky, A. M. Szpilman*
6. Bürgenstock Conference on Stereochemistry, May 2013:
 - “Design and Catalytic Activity of Nitroxide OrganoCatalysts” A. M. Szpilman* M. Amar
7. 12th Annual Meeting of the Medicinal Chemistry Section – Israel Chemical Society, Rehovot, 23-24 June 2014 (3 posters):
 - “Organocatalytic Oxidation of Aldehydes to Esters and Amides” H. Toledo, A. M. Szpilman* (Prize to H. Toledo for best abstract)
 - “Catalytic Enantioselective Synthesis of β -Amino Ketones From Enones and a Fluorinated Gabriel Reagent” S. Avidan, H. Ghosh, A. M. Szpilman*
 - “Novel Stable α -Hydrogen Nitroxides: Design and Applications” M. Amar, S. Bar, H. Toledo, A. M. Szpilman*
8. Gordon Research Conference on Stereochemistry, 27. July-2. August 2014 (3 posters):
 - a) “Hypervalent Iodine Mediated Umpolung Alkylation of Carbonyl Compounds” O. S. Shneider E. Piseravsky A. M. Szpilman*

- b) “Catalytic Enantioselective Synthesis of β -Amino Ketones From Enones and a Fluorinated Gabriel Reagent” S. Avidan, H. Ghosh, A. M. Szpilman*
 - c) “Design and Synthesis of Stable α -Hydrogen Nitroxides” M. Amar, S. Bar, H. Toledo, A. M. Szpilman
9. 80th Annual meeting of the Israel Chemical Society, February 2015 (4 posters):
- a) “Oxidative Single-Step Umpolung α -Alkylation of Carbonyl Compounds” O. S. Shneider E. Piseravsky P. Fristrup, A. M. Szpilman*
 - b) “Oxidative asymmetric umpolung alkylation of Evans’ β -keto imides by dialkylzinc nucleophiles” T. Targel, J. N. Kumar, O. Svetlana Shneider, S. Bar, N. Fridman, S. Maximenko, A. M. Szpilman*
 - c) “Novel Nitroxyl Radical Catalyzed Aerobic Oxidation of Alcohols and Amines” J. N. Kumar, S. Bar, A. M. Szpilman*
 - d) “ α -Hydrogen Nitroxyl Radicals: Design, Synthesis and Properties” M. Amar, S. Bar, M. A. Iron, H. Toledo, A. M. Szpilman*
10. Bürgenstock Conference on Stereochemistry, April 2015:
- “Umpolung Alkylation of Ketones” A. M. Szpilman*
11. 15th EMFC-AMFC, Rehovot, 15-18 November 2015 (9 posters):
- a) “Design and Synthesis of Stable α -Hydrogen Nitroxides” M. Amar, S. Bar, M. A. Iron, H. Toledo, A. M. Szpilman*
 - b) “Synthesis of Ketones bearing β -quaternary and tertiary centers through Umpolung α -Allylation” S. Arava, J. N. Kumar, A. M. Szpilman
 - c) “Asymmetric umpolung Alkylation of Evans’ Imides and β -keto imides by dialkylzinc nucleophiles T. Targel, J. N. Kumar, O. S. Shneider, E. Piseravsky, N. Fridman, S. Maksymenko, A. M. Szpilman*
 - d) “IAPNO Nitroxyl Radical Catalyzed Aerobic Oxidation of Alcohols and Amines” J. N. Kumar, S. Bar, M. Amar, R. J. Batrice, H. Toledo, A. M. Szpilman
 - e) “Mechanism of the Copper/TEMPO Catalyzed Aerobic Oxidation of Alcohols” (*Thieme Poster Award*), M. A. Iron, A. M. Szpilman*
 - f) “Hypervalent Iodine Mediated Umpolung Alkylation of Carbonyl Compounds” O. S. Shneider, E. Piseravsky, A. M. Szpilman*
 - g) “Catalytic Enantioselective Synthesis of β -Amino Ketones From Enones and a Fluorinated Gabriel Reagent” S. Avidan, H. Ghosh, A. M. Szpilman*

- h) “Characterization of novel water-soluble amphotericin B-PEG conjugates with reduced toxicity and potent in vivo efficacy” A. Halperin, A. Szpilman* N. Osherov, I. Benhar.
 - i) “Towards Direct Alpha-Arylation Of Ketones Via Oxidative Umpolung of Enolates” S. Maksymenko, A. M. Szpilman*
12. 81st Annual meeting of the Israel Chemical Society, February 2016 (3 posters):
- a) “Synthesis Of Ketones Bearing β -Quaternary and Tertiary Centers Through Umpolung α -Allylation”
 - b) “Towards Direct Alpha-Arylation Of Ketones Via Oxidative Umpolung of Enolates”
 - c) “Design and Synthesis Of Stable α -Hydrogen Nitroxides”
13. 5th International Conference on Hypervalent Iodine Chemistry (ICHIC 2016)" July 3-6, 2016, Les Diablerets, Switzerland:
- “Transition Metal-Free Direct Intermolecular α -Arylation of Ketones via Umpolung” Shimon Maksymenko, Keshaba N. Parida, Gulab Pathe, Atul M. More, Yuriy B. Lipisa, and Alex M. Szpilman*
14. 82nd Annual meeting of the Israel Chemical Society, February 2017 (2 posters)
- a) “Enolonium Species – Umpoled Enolates” Shimon Maksymenko, Shlomy Arava, Jayprakash N. Kumar, Keshaba N. Parida, Mark A. Iron, Peter Frstrup, Alex M. Szpilman*
 - b) “Mechanism of the Copper/TEMPO Catalyzed Aerobic Oxidation of Alcohols” M. A. Iron, A. M. Szpilman*
15. 14th Annual Meeting of the Medicinal Chemistry Section – Israel Chemical Society, Rehovot, 7. June 2017 (3 posters):
- a) “Hypervalent Iodine Mediated Umpoled Chemistry” Shimon Maksymenko, Keshaba N. Parida, Gulab Pathe, Yuriy B. Lipisa, Atul M. More, and Alex M. Szpilman*
 - b) “Direct Umpolung N-Heteroarylation of ketones via Enolonium Species” Gulab K.Pathe, Atul A. More, Keshaba N. Parida, Shimon Maksymenko, Lipisa B. Yuriy, and Alex M. Szpilman*
 - c) “Dual modes of catalysis of novel α -Hydrogen nitroxides” H. Toledo, M. Amar, S. Bar A. M. Szpilman
16. 16th EMFC-AMFC, Vienna, 27-31 August 2017 (4 posters):

- a) "Mechanistic Insight into Hypervalent Iodine Mediated Reactions Of Carbonyl Compounds" Alex M. Szpilman,* Shlomy Arava, Peter Fristrup, Shimon Maksymenko, Mark A. Iron, Shmuel Zilberg, Keshaba N. Parida
 - b) "Regioselective Cinnamylation, Crotylation, and Prenylation of Ketone Enolates via Umpolung" Shlomy Arava, Shimon Maksymenko, Jayprakash N. Kumar, Keshaba N. Parida, Alex M. Szpilman*
 - c) "Direct Intermolecular Amination of Ketones via Enolonium Species" Atul A. More, Gulab Pathe, Keshaba N. Parida, Shimon Maksymenko, Yuriy B. Lipisa, and Alex M. Szpilman*
 - d) "Transition Metal-Free Direct Intermolecular α -Arylation of Ketones via Umpolung" Shimon Maksymenko, Keshaba N. Parida, Gulab Pathe, Atul M. More, Yuriy B. Lipisa, and Alex M. Szpilman*
17. 83rd Annual meeting of the Israel Chemical Society, 13-14 February 2018 (4 posters):
- a) "Dual Modes of Catalysis of Novel α -Hydrogen Nitroxides" H. Toledo, A. M. Szpilman
 - b) "Sunlight Assisted Direct Amide Formation via a Charge-Transfer Complex" Irit Cohen, Abhaya K. Mishra, Galit Parvari, Rachel Edrei, Mauricio Dantus, Yoav Eichen, Alex M. Szpilman
 - c) "A New Reaction; Direct Intermolecular Alfa-Arylation of Ketones via Umpolung" Shimon Maksymenko, Keshaba N. Parida, Gulab Pathe, Atul A. More, Yuriy Lipisa, Alex M. Szpilman
 - d) "Direct Intermolecular Azidation and Amination of Ketone Enolates via Umpolung" Atul A. More, Gulab Pathe, Keshaba N. Parida, Shimon Maksymenko, Yuriy B. Lipisa, and Alex M. Szpilman*
18. EuCHeMS conference on Organic Free Radicals June 17-20, 2018 Marseille, France (2 posters)
- "Dual Modes of Catalysis of Novel α -Nitroxide Radicals", Hila Toledo, Michal Amar, Sukanta Bar, Alex M. Szpilman
 - "Mechanism of the Copper/TEMPO Catalyzed Aerobic Oxidation of Alcohols", Mark A. Iron, Alex M. Szpilman
19. 6th International Conference on Hypervalent Iodine Chemistry (ICHIC 2018) July 1-4, 2018, Cardiff, Wales, United Kingdom

- “Transition Metal-Free Direct Intermolecular α -Arylation of Ketones via Umpolung” Shimon Maksymenko, Keshaba N. Parida, Gulab Pathe, Atul A. More, Yuriy Lipisa, Alex M. Szpilman
20. 84th Israel Chemical Society Meeting February 12-13, 2019, Tel Aviv, Israel (4 posters)
- “Formal C(sp²)–C(sp²) Cross-Coupling of Vinyl Azides with Indoles” Atul A. More, Alex M. Szpilman
 - “Asymmetric umpolung α -Arylation and α -Azidation of Evans’ Propionyloxazolidin-2-one” Gulab K. Pathe, Alex M. Szpilman
 - “Umpolung Morita-Baylis-Hilman C-H Functionalization of Unsaturated Ketones via in situ formation of Electrophilic Enolonium Species” Shlomy Arava, Alex M. Szpilman
 - “Sun-light Assisted Synthesis of Amides and Peptides” Abhaya K. Mishra, Galit Parvari, Yoav Eichen, Alex M. Szpilman

(c) Presentations at informal international seminars and workshops

(d) Seminar presentations at universities and institutions

1. “Synthesis of Antimalarial Endoperoxides and Iron(II)-induced Reactions Related to Their Mode of Action” Technical University of Denmark, 13. June 2002
2. “Antifungal Amphotericin B and Antimalarial Yingzhaosu A – Natural Product Synthesis as a Vehicle for Discovery in Chemistry and Chemical Biology” University of Zurich, Switzerland, 24. October 2006
3. “Antifungal Amphotericin B and Antimalarial Yingzhaosu A – Natural Product Synthesis as a Vehicle for Discovery in Chemistry and Chemical Biology” Department of Chemistry, Hebrew University of Jerusalem, Israel, 25. January 2007.
4. “Antifungal Amphotericin B and Antimalarial Yingzhaosu A – Natural Product Synthesis as a Vehicle for Discovery in Chemistry and Chemical Biology” Technion, Israel, 29. January 2007.
5. “Designed Synthetic Analogues of the Clinically Important Antibiotic Amphotericin B” Weizmann Institute of Science, Israel 30. January 2007

6. "Antifungal Amphotericin B and Antimalarial Yingzhaosu A – Natural Product Synthesis as a Vehicle for Discovery in Chemistry and Chemical Biology" School of Pharmacy, Hebrew University of Jerusalem, Israel 14. October 2007
7. "A Strategy for Molecular Editing of Amphotericin B: Total Synthesis and Biological Studies of 35-Deoxy-Amphotericin B Methyl Ester" Ben Gurion University of the Negev, Israel 22. October 2007
8. "A Strategy for Molecular Editing of Amphotericin B: Total Synthesis and Biological Studies of 35-Deoxy-Amphotericin B Methyl Ester" Faculty of Life Sciences, Copenhagen University, Denmark, 29. April 2008
9. "Diverted Total Synthesis as a Tool for Chemical Biology: Understanding the Mode of Action of the Antifungal Drug Amphotericin B" Bar Ilan University, Israel, 27. May 2009
10. "Diverted Total Synthesis as a Tool for Chemical Biology: Understanding the Mode of Action of the Antifungal Drug Amphotericin B" Tel Aviv University, Israel, 1. November 2009
11. "Diverted Total Synthesis as a Tool for Chemical Biology: Understanding the Mode of Action of the Antifungal Drug Amphotericin B" Israel Institute for Biological Research, 22. June 2010
12. "1. Diverted Total Synthesis as a Tool for Chemical Biology: Understanding the Mode of Action of the Antifungal Drug Amphotericin B 2. Some Novel Applications of TEMPO" Technical University of Denmark (DTU), 11. August 2010
13. "1. Direct Organocatalytic Oxidation of Alcohols and Aldehydes to Esters & 2. Diverted Total Synthesis as a Tool for Chemical Biology: Understanding the Mode of Action of the Antifungal Drug Amphotericin B" Ben Gurion University of the Negev, 3. January 2011
14. "New Paradigms in the Design and Application of Nitroxide Organocatalysts" Tel Aviv University, Israel 2013
15. "New Paradigms in the Design and Application of Nitroxide Organocatalysts" Bar Ilan University, Israel 2013
16. "Creativity and Design in Oxidative Synthetic Chemistry" Aarhus University, Denmark, 25. March 2014
17. "Creativity and Design in Oxidative Synthetic Chemistry" DTU, Denmark, 26. March 2014

18. "Creativity and Design in Oxidative Synthetic Chemistry" U. Göttingen, Germany, 12. May 2014
19. "Creativity and Design in Oxidative Synthetic Chemistry" U. Münster, Germany, 15. May 2014
20. "Creativity and Design in Oxidative Organic Chemistry" U. Michigan Ann Arbor, 3. September USA 2014
21. "Creativity and Design in Oxidative Organic Chemistry" University of Utah, USA, 5. September 2014
22. "Creativity and Design in Oxidative Organic Chemistry" UC Santa Cruz, USA, 8. September 2014
23. "Creativity and Design in Oxidative Organic Chemistry" UC Berkeley, USA, 10. September 2014
24. "Creativity and Design in Oxidative Organic Chemistry" Justus Liebig's University Gießen, 19. September 2014
25. "Creativity and Design in Oxidative Organic Chemistry" Weizmann Institute of Science, 28. October 2014
26. "Creativity and Design in Oxidative Organic Chemistry" Technion – Israel Institute of Technology, Israel, 24. November 2014
27. "Creativity and Design in Oxidative Organic Chemistry" Ben Gurion University of the Negev, Israel, 7. December 2014
28. "Creativity and Design in Oxidative Organic Chemistry" Hebrew University of Jerusalem, Israel, 18. December 2014
29. Minisymposium at Teva TAPI, Israel, 19. February 2015
30. "Creativity and Design in Oxidative Organic Chemistry" Université Libre de Bruxelles, Belgium, 21. May 2015
31. "Creativity and Design in Oxidative Organic Chemistry" RWTH Aachen, Germany, 22. May 2015
32. "Creativity and Design in Oxidative Organic Chemistry" Hebrew University of Jerusalem, School of Pharmacy, 31. May 2015
33. "Creativity and Design in Oxidative Organic Chemistry" Ariel University, 7. June 2015
34. "Making the Elusive Tangible in Organic Synthesis" Tel Aviv University, 25. October 2015
35. "Making the Elusive Tangible in Organic Synthesis" Ben Gurion University of the Negev, 2. November 2015

36. "Making the Elusive Tangible in Organic Synthesis" Bar Ilan University, 9. December 2015
37. "Novel Design Concept for Cyclic α -Hydrogen Nitroxides" Queen's University Belfast, UK, 9 December 2015
38. "Making the Elusive Tangible in Organic Synthesis" EPFL, Switzerland, 9. May 2016
39. "Making the Elusive Tangible in Organic Synthesis" Novartis, Basel, Switzerland, 7. July 2016
40. "Mechanistic Insight Leads to New Reactions", Ariel University, Israel 17. January 2018.
41. "Mechanistic Insight Leads to New Reactions", Tel Aviv University, Israel 28. October 2018.
42. "Mechanistic Insight Leads to New Reactions", Alicante University, Spain, 6. June 2019
43. "The Importance of Mechanistic Understanding for Developing Novel Umpolung Reactions and Solar Induced Processes" Weizmann Institute of Science, 3. December 2019
44. "The Importance of Mechanistic Understanding for Developing Novel Umpolung Reactions and Solar Induced Processes" Institute of Chemistry, Hebrew University, 16. January 2020

• Patents

Patent family 1:

"Alfa-Hydrogen Substituted Nitroxyls as Catalysts"

Alex M. Szpilman and Michal Amar

US Provisional Patent Application 61/595.184, *Filed 6. February 2012*

"Alpha-hydrogen substituted nitroxyls and derivatives thereof as catalysts"

Alex M. Szpilman and Michal Amar

PCT international Application, WO 2013118118 A1 20130815, *Filed 15. February 2013*

"Alpha-hydrogen substituted nitroxyls and derivatives thereof as catalysts"

Alex M. Szpilman and Michal Amar

US Patent US Patent 9,475,774 **2016** *Filed 6. August 2014*

Patent Family 2:

“Amphotericin B Derivatives”

Alex M. Szpilman, Vladimir Dergachev, Nir Osherov, Itai Benhar

US Provisional Patent Application 62/204.502, 2015 *Filed 13 August 2015*

“Amphotericin B Derivatives”

Alex M. Szpilman, Vladimir Dergachev, Nir Osherov, Itai Benhar

US Patent 9,750,817, 2018 *Filed 16 August 2016*

Patent Family 3:

Alex M. Szpilman, Sourav K. Santra

Light Induced Catalytic C-H Oxygenation of Alkanes

Filed 1/10-2019

• Research Grants

- 2021-present **INEOS Industrial Collaboration Grant**
Sole PI
100,000 Euro for two years (50,000 Euro per year)
- 2019-Present **Israel Science Foundation Individual Research Grant 870/19**
Sole PI
1,200,000 NIS (320,000 \$) for four years (300,000 NIS/year)
- 2020-present **ות"ת**
480,000 NIS for four years, 50% of the salary of a PhD. Level technician to operate the High Resolution Mass Spectrometer.
- 2019-2020 **ות"ת /Mafat-Grant, “Borazine Energetic Compounds”**
150,000 NIS for 1 year, PI is Prof. Alex M. Szpilman. Grant is joint with Professor Yoav Eichen (Secondary Investigator, Technion), Funding held in entirety at Ariel U. Research Authority
- 2018 **ISF Institutional Equipment Grant 621/18 for a High Resolution Mass Spectrometer for Ariel University**
924,000 NIS + up to 1,108,000 NIS matching from Ariel University.
Principal Investigators (PI): Prof. Alex M. Szpilman, Dr Flavio Grynszpan and Dr Michael Montag.
- 2018-2019 **KAMIN grant ” Studying long-term TOX and oral availability of AMB-PEG conjugates”**
258,720 NIS for one year. PI: Prof. Alex Szpilman. Grant is joint with PI Professor Itai Benhar and PI Professor Nir Osherov from Tel Aviv University. The indicated sum is the sum held by the PI at Ariel University (funding for Prof. Benhar and Osherov is 400,000 NIS administered by Tel Aviv University)
- 2015-2019 **Israel Science Foundation Individual Research Grant 1914/15**
Sole PI
1,240,000 NIS (328,000 \$) for four years (310,000 NIS/year)
- 2017-2018 **ות"ת /Mafat-Grant, “Borazine Energetic Compounds”**
150,000 NIS for 1 year, PI is Prof. Alex M. Szpilman. Grant is joint with Professor Yoav Eichen (Secondary Investigator, Technion), Funding held in entirety at Ariel U. Research Authority
- 2016-2018 **ות"ת /Mafat-Grant, “Binary Energetic Ionic Liquids”**
500,000 NIS for 1.5 year, Joint with Professor Yoav Eichen (PI, Technion), my part 250,000 (236,410 at Ariel U. after VAT)
- 2015-2016 **ות"ת /Mafat-Grant, “Binary Energetic Ionic Liquids”**
Joint with, Assoc. Prof. Yoav Eichen (PI, Technion)
500,000 NIS for one year (250,000 NIS per group)
- 2011-2015 **Israel Science Foundation Individual FIRST (BIKURA) Research**

Grant 1636/11

642,000 NIS (170,000 \$) for three years (214,000 NIS/year). Extended for one year, due to 2 year delay in receiving lab space at the Technion

- 2010-2015 **Israel Science Foundation Individual Research Grant 1419/10**
952,000 NIS (250,000 \$) for four years (238,000 NIS/year), extended for one year, due to two year delay in receiving lab space at the Technion
- 2011-2012 **German-Israeli Foundation for Research and Development**
Young Scientist grant, **grant No. I-2234-2067/2009**
36,100 € for one year
- 2010 **Israel Science Foundation New Faculty Equipment Grant**
200,000 \$ (200,000 matching from the Technion)
- 2009-2011 **Teva-Asia Research Project**
16,000 USD
- 2004-2005 **The Carlsberg Foundation, Postdoctoral Scholarships** for research at the ETH Zürich peer-reviewed postdoctoral research grant
60,000 SFr (incl. 15,000 SFr participation by the host institution)
- 2003-2004 **The Carlsberg Foundation, Postdoctoral Scholarships** for research at the ETH Zürich, peer-reviewed postdoctoral research grant
60,000 SFr (incl. 15,000 SFr participation by the host institution)

• Synopsis of research, including reference to publications and grants in above lists*History of the group*

My research group was founded in March 2009 at the Technion. In March 2016 we moved to Ariel University. From 2009-2012 we were working under limited conditions due to lack of laboratory space (originally promised to be fully available October 2009) inhibiting us from doing research although external funding was available. In March 2015 I was denied tenure and promotion allegedly for “publishing too late for the impact of the research to be properly evaluated” an obvious consequence of the Technion’s failure to provide laboratory space on time. From 03/2015 until moving to Ariel University in 03/2016 the group was forbidden to hire new students and postdocs by the Technion despite external (ISF) funding being available. The group currently includes 5 Ph.D. students, 1 M.Sc. student, and three postdoctoral fellows.

Research in Organic Chemistry

The primary focus of the Szpilman group is the development of new ways of forging chemical bonds. We believe that through the study of highly reactive intermediates and finding way to stabilize them we can understand and then use the in the design, development and study of new reactions Thus we can move chemical science forward

beyond its current frontiers. Mechanistic studies therefore serve as a primary tool in our research and forms the basis from which new applications are developed. These studies rely heavily on NMR, IR, MS and other spectroscopic methods as well as computational methods.

Within this paradigm our greatest research contributions is the first characterization of enolonium species, reactive electrophilic species formed by the reaction of enolates with an oxidizing agent such as a hypervalent iodine reagent. This finding has allowed us to design a number of unprecedented reactions. In another major contribution we have designed and prepared new stable nitroxide radicals and used them as catalysts in oxidation reactions. Further contributions include the development of new antifungal agents and the use of amine haloalkane charge-transfer complexes that through solar light activation is an attractive gateway to harvest the energy from the sun for driving synthetic reactions.

We also contribute to the defense of the State of Israel by developing new energetic materials (Ministry of Defense/MAFAT research grants).

Currently we are engaged in 5 research programs (alone or in collaboration with researchers from Tel Aviv University and the Technion):

1. Radical processes and nitroxide catalysts (ISF 1914/15, GIF grant)^{13,14,20,21,24,26, 31}
2. Umpolung of enolates (developed during ISF 1419/10 Supported by ISF 870/19)^{18,19,25,27,28,29,30}
3. Asymmetric Catalysis (BIKURA 1636/11)^{16,17}
4. Biologically active natural products (ISF 1419/10, KAMIN 2018)^{1-11, 12,23}
5. Energetic materials (4 Ministry of Defense/MAFAT grants)

• Present Academic Activities

Research in progress

Umpolung of Enolates - Ongoing major direction in the group - open ended

Catalysis with nitroxide - Ongoing major direction in the group - open ended

Solar assisted synthesis – independently and in collaboration with Prof. Yoav Eichen (Technion) – open ended

New non-toxic analogues of Amphotericin B, - collaboration with Prof. Itai Benhar and Prof. Nir Osherov (Tel Aviv U.) – Funded by KAMIN grant.

Books and articles to be published

SUBMITTED PAPERS

1.

“Synthesis and Reactions of Borazines” (Review article)

Ishita Neogi and **Alex M. Szpilman***

ARTICLE IN PREPARATION

2.

“Imidazole Based Ionic Liquids as Binary Energetic Materials”

Sagi Sevilia, Galit Parvari Levy Gottlieb, Dan Grinstein, Yoav Eichen, and **Alex M. Szpilman***

Article in preparation. Approved for publication by the Ministry of Defense

3.

“On the Structure, Formation, and Reactivity of Enolonium Species”

Shmuel Zilberg,* **Alex M. Szpilman,*** and Mark A. Iron.

Article being revised

4.

“Salts of Di- and Tri-Ethanolamine as Energetic Binary Ionic Liquids” Sagi Sevilia, Galit Parvari, Yoav Eichen,* and **Alex M. Szpilman***

Article in preparation.

5.

Cross-Coupling of silyl-enol ethers via Enolonium Species

Keshab N. Parida, Shimon Maksymenko, Gulab K. Pathe, and **Alex M. Szpilman***

Invited contribution to “Organic Syntheses”

6.

Catalytic Aerobic Kinetic Resolution of Axially Chiral Diols

Lenin. K. Verdhi and **Alex M. Szpilman***

Article in Preparation

7.

Umpolung of Enolates

Yuriy B. Lipisa, Keshab Parida, Raja Kapanaiiah, and **Alex M.**

Szpilman*

Review paper

8.

Solar Light Assisted Synthesis

Jonatan Rahamim, Ortal Dorfman, Galit Parvari, Yoav Eichen,* and

Alex M. Szpilman*

Review Paper

• **Additional Information**

1. Since 2003 served as a reviewer of more than 160 papers for the following scientific journals:

Journal of the American Chemical Society, IF 15.419, Q1

Angewandte Chemie, IF 15.336, Q1

ACS Catalysis, IF 13.721, Q1

Organic Letters, IF 6.005, Q1

Chemical Communications, IF 6.222

Organic Chemistry Frontiers IF 5.455

Chemistry A European Journal, IF 5.236, Q2

The Journal of Organic Chemistry, IF 4.354, Q1

Catalysts, IF 3.465

Molecules, IF 3.098

Organic & Biomolecular Chemistry, IF 3.876, Q1

RSC Advances, IF 2.936

Catalysis Letters, IF 2.994

Synthesis, IF 3.157, Q2

Israel Journal of Chemistry, IF 2.607

Synlett, IF 2.369

Beilstein Journal of Organic Chemistry, IF 2.883, Q2

Tetrahedron, IF 2.457

Tetrahedron Letters, IF 2.125

Carbohydrate Research, IF 2.074

Journal of Coordination Chemistry, IF 1.751, Q3

IScience,

ChemSusChem, IF 7.411

2. Reviewer for >10 Grant proposals from the following agencies:

Israel Science Foundation

Germany – Israel Foundation (GIF)

MOST-Israel

PAZY Foundation - Israel

American Chemical Society – Petroleum Research Fund (ACS-PRF)

3. External examiner for Ph.D. theses at:

DTU, the Technical University of Denmark (1)

Ben Gurion University of the Negev (2)

Tel Aviv University (3)

Indian Institute of Technology, Kharagpur (1)

External examiner for two Ph.D. students' Ph.D. proposals at the EPFL,
Switzerland 2016

4. Internal examiner for multiple (>20) M.Sc., and Ph.D. theses, and Ph.D.
proposals at the Technion and Ariel University

5. Outreach

A. 2010- present.

Main organizer of the Israel Chemical Society running teams that participate in the yearly "Mountain to Valley Relay Race". Our participation has been used to promote the awareness of chemistry in Israel.

B.

December 2015 – Popular lecture about chemistry at the MADATECH, Haifa

C.

2009-2016, Teaching the Israeli Chemistry Olympic team, advanced organic chemistry.

D.

8/2-2019 Health Day at Kiryat Tivon Middle School

6. Languages

Danish – Fluent

English – Fluent

Hebrew – Fluent

German – Good

Swedish – understands written and spoken Swedish

Norwegian – understands written and spoken Norwegian

Polish – very basic