

Addy Pross

CURRICULUM VITAE (synopsis)

• Personal Details

Addy Pross
Place and date of Birth: Tel Aviv, 1945
Address: Department of Chemistry, Ben Gurion University
Beer Sheva, Israel 84105

• Education

B.A. (First Class Hons) - 1966, University of Sydney, School of Chemistry
Ph.D. - 1970, University of Sydney, School of Chemistry
Name of advisor: Professor S. Sternhell
Title of thesis: Mechanistic and Spectroscopic Studies in
Organic Chemistry

• Recent Employment History

2017 Apr-May	STIAS Fellow	Stellenbosch University, South Africa
2016 Jan-June	Visiting Professor	New York University, Shanghai
2015 Sept –Dec	Visiting Professor	New York University, Shanghai
2014 Sept –Dec	Visiting Professor	New York University, Shanghai
2013-	Emeritus Professor	Ben-Gurion University
1992-94	ARC Professorial Fellow	School of Chemistry University of Sydney, NSW, Australia
1986-	Professor	Department of Chemistry, Ben-Gurion University
1989-90	Visiting Professor	School of Chemistry, Rutgers University, New Brunswick, NJ, USA
1988 April	Visiting Professor	University of Padova, Padova, Italy
1986 June	Visiting Professor	University of Lund, Lund, Sweden
1985	Visiting Professor	Stanford University, Stanford, CA, USA

• Editorial Boards

2016 - Associate Editor, The Nature of Science (Naturwissenschaften)
2015 Guest Editor, Israel Journal Chemistry: Special “Origin of Life” Issue honoring
Albert Eschenmoser’s 90th Birthday
2010 - Member, Editorial Board, Life Journal
1997 - 2005 Member, Editorial Board, Journal of Physical Organic Chemistry

• Citation Record

h-index 43

Web of Science citations: ca. 6,500

• Present Research Interests:

Bridging between the Physical and Biological Science
Seeking the Roots of Darwinian Theory in Chemistry.

Seeking the Physical-Chemical principles governing the Emergence of Life.

• **Special Citations**

Included in the ISI List of 10,000 Most Cited Chemists Word-Wide in 1997 (within top 0.3% of 600,000 surveyed publishing chemists).

• **Media**

1. Think Atheist Radio Interview – “What is life? How chemistry becomes biology”.
<http://www.thinkatheistradio.com/albums/dr-addy-pross/>

2. “Conversations” ESF TV Interview <http://www.youtube.com/watch?v=5YVHQWTFAYE>

3. Earth Life Science Institute Blog
“Why Life? A probing new question”
<http://old.elsi.jp/en/blog/44-why-life-addy-pross/>

4. HuffPost Science Blog Post
“What is life?”
http://www.huffingtonpost.com/addy-pross/what-is-life_b_4992980.html?utm_hp_ref=science

5. American Associates Ben Gurion University of the Negev – Post
“What is Life?”
<http://www.aabgu.org/media-center/bgu-making-a-difference/what-is-life.html>

6. Robin Hood Radio interview with David Freeman, HuffPost Senior Science Editor
“What is Life?”
<http://castroller.com/podcasts/AmWhdd/3970084>

7. Web Interview for Science-Book-A-Day
<http://sciencebookaday.com/2015/05/13/science-book-a-day-interviews-addy-pross/>

• **Funded Research Organizations**

EU COST ACTION – Life Origins TD1308, 2014-
EU COST ACTION – Systems Chemistry CM1304, 2014-

• **Invited Lectures (since 2012)**

Gordon Conference, Origin of Life, Galveston, Texas, January 2012.
Open Questions on the Origin of Life, May 2012, Leicester, UK
SIDEER 2013, Emergence of Design in Nature, Sde Boker, March 2013
Systems Chemistry Symposium, Groningen, Sept. 2013
HGT conference, Milton Keynes, UK, Sept. 2013
Emergence Conference, Anchorage, US, June 2013
COSPAR Astrobiology conference, Bangkok, Nov. 2013
Earth Life Science Institute, Workshop “Why Life?”, Tokyo, January 2014
Workshop “Organization between biology and chemistry” IHPST, Paris May 2014
Systems chemistry Conference, San Sebastian, Spain June 2014
EU COST Origins Conference, Porto, Portugal, March 2015
Workshop “Reproduction and Replication”, University of Nantes, Nantes, May 2015.
PIER Graduate Week 2015, Hamburg University, October, 2015.
Minicourse “Origin of Life”, European Astrobiology School, Bordeaux, February, 2016.

COST Action 1304, Systems Chemistry 2016, Valtice, Czech Republic, May 2016
18th International Conference on Origin of Life (ISSOL), San Diego, July 2017
Life on earth and beyond, Bertinoro, Italy, March 2018.
ELSI Workshop, Puzzles and Solutions in Astrobiology, Toyko, Japan, May 2018.

• Recent Scientific Publications

(a) Authored books

A. Pross, "Theoretical and physical principles of organic reactivity", Wiley, New York, 1995.
A. Pross, "What is life? How chemistry becomes biology", Oxford University Press, Landmark Science, 2nd Ed., 2016.

(b) Selected Refereed Articles

1. A. Pross, and V. Khodorkovsky, Extending the concept of kinetic stability: Toward a paradigm for life, *J. Phys. Org. Chem.* **17**, 312-316 (2004).
2. A. Pross, Causation and the origin of life. Metabolism or replication first? *Origins Life Evol. Bios.* **34**, 307-321 (2004).
3. A. Pross, On the emergence of biological complexity: Life as a kinetic state of matter. *Origins Life Evol. Bios.* **35**, 151-166 (2005).
4. A. Pross, On the chemical nature and origin of teleonomy. *Origins Life Evol. Bios.* **35**, 383-394 (2005).
5. A. Pross, How can a chemical system act purposefully? Bridging between life and non-life. *J. Phys. Org. Chem.*, **21**, 724-728 (2008).
6. A. Pross, Seeking the chemical roots of Darwinism: Bridging between chemistry and biology, *Chem. Eur. J.* **15**, 8374-8381 (2009).
7. N. Wagner, A. Pross, E. Tannenbaum, Selection advantage of metabolic over non-metabolic replicators: A kinetic analysis, *BioSystems* **99**, 126-129 (2010).
8. A. Pross, Open Questions on the Origin of Life: Commentary on "Plausibility of RNA World" *Origins Life Evol. Bios.* **40**, 434-437 (2010).
9. A. Pross, Open Questions on the Origin of Life: Commentary on "Life as a Unity or Confederacy" *Origins Life Evol. Bios.* **40**, 478-479 (2010).
10. A. Pross, How does biology emerge from chemistry? *Origins Life Evol. Bios.* **42**, 433-444 (2012).
11. A. Pross, Dynamic Kinetic Stability as a Conceptual Bridge Linking Chemistry to Biology *Current Organic Chemistry*, Special issue on "Prebiotic Chemistry". **17**, 1702-3 (2013).
12. A. Pross, The evolutionary origin of biological function and complexity, *J. Mol. Evol.* **76**, 185-191 (2013).
13. R. Pascal, A. Pross, and J.D. Sutherland, Towards an evolutionary theory of the origin of life based on kinetics and thermodynamics. *Open Biol* **3**: 130156 (2013)
<http://dx.doi.org/10.1098/rsob.130156>
14. R. Pascal, A. Pross, The nature and mathematical basis for material stability in the chemical and biological worlds, *J. Systems Chem.* **5**, 3 (2014).

Selected Reviews

1. A. Pross, Stability in chemistry and biology: Life as a kinetic state of matter. *Pure Appl. Chem.* **77**, 1905-1921 (2005).
2. N. Wagner and A. Pross, The Nature of Stability in Replicating Systems. *Entropy* **13**, 518-527 (2011).

3. A. Pross, Toward a general theory of evolution: Extending Darwinian theory to inanimate matter. *J. Systems Chem.* **2**, 1 (2011).
4. A. Pross and R. Pascal, The origin of life: what we know, what we can know, and what we will never know, *Open Biol.* **3**, 120190 (2013).
5. R. Pascal and A. Pross, Stability and its manifestation in the chemical and biological worlds, *Chem. Comm.* **51**, 16160 (2015).
6. A. Pross, Physical Organic Chemistry and the Origin of Life Problem: A Personal Perspective, *Isr. J. Chem.* **56**, 83 (2016).
7. R. Pascal and A. Pross, The logic of life, *Origins Life Evol. Bios.* **46**, 507-513 (2016).
8. R. Pascal and A. Pross, A Roadmap toward Synthetic Protolife, *Synlett* **28**, 30–35 (2017).