

# Ophir Flomenbom, Curriculum Vitae

Founder, Owner & Chief Scientist in Flomenbom-BPS Ltd: Research and software development in Biophysics & dynamics (active company since Fall 2008)

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## Education

- Ph. D., School of Chemistry, Tel-Aviv University (2005)
- B. Sc., Chemistry, Tel Aviv University (2000)
- B. Sc., Biology, Tel Aviv University (2000)

## Fellowships, Honors & Funding

- Chief director: conference, [Majorana Centre Sicily Italy](#) (2014) about single file dynamics,
- Chief editor: Special Issue, [Biophysical Reviews and Letters](#) (2014) about single file dynamics
- Managing editor: [Biophysical Reviews and Letters](#) (2014)
- Chief editor: Special Issue, [Biophysical Reviews and Letters](#) (2013) about solving trajectories from single molecules
- Editorial board member: [Biophysical Reviews and Letters](#) (2012)
- Editorial board member: [ISRN biophysics](#) (2011), [CPIB biophysics](#) (2012)
- [NIH](#) approval of Flomenbom-BPS Ltd (in participating in grant applications) (since, 2011)
- [ERC](#) approval of Flomenbom-BPS Ltd (in participating in grant applications) (since, 2010)
- The Center for Absorbance in Science, MOIA, The State of Israel (Funding for 2010)
- Selected for the directory *Who's Who in America*, 2008 & 2009 editions, for distinguish achievements in the field of Biophysics.
- Postdoctoral fellow, MIT (MA, USA), 2005 Oct – 2008 Sep
- Ph. D. in Chemistry with excellence, Tel-Aviv University, 2006.
- The Israel Chemical Society prize for outstanding graduate students, 2005.
- The Trotzki Scholarship for outstanding graduate students, 2004.
- B. Sc. in Chemistry & Biology, Magna Cum Laude, Tel-Aviv University, 2001.
- The Dean Award, Tel-Aviv University, 1998-2000.

## Research Interests

- **Biophysical processes:** two-state trajectories, enzymes, channels, membranes, dynamics of biomolecules and other macromolecules
- **Stochastic processes:** single file dynamics, heterogeneous random walks in 1d, resonant activation, networks, Markovian and not Markovian dynamics
- **Interdisciplinary science:** models in socio-econo-physics

## Research Experience

- Flomenbom-BPS: 2008-present
- MIT, Department of Chemistry. Post-Doctoral position: 2005-2008
- Tel Aviv University, Chemical physics Department. Graduate Student: 2000-2005
- National Institutes of Health, NIDDK, DIR, LCP. Courtesy Associate: April-October, 2004.
- Tel Aviv University, Department of Neurobiochemistry. Assistant: 1999-2000.

## Teaching Experience

- Since 2011, O.F. writes scientific entries in Wikipedia; The entries' list is presented in, <http://en.wikipedia.org/wiki/User:Flomenbom>
- Tel Aviv University. Random Walks; Assistant, 2000-2005.
- Tel Aviv University. Statistical Thermodynamics; Assistant, 2000-2005.
- Tel Aviv University. General Chemistry; Assistant, 2003.
- Ramot, Tel Aviv University. Introduction to University Chemistry; Lecturer, July-September, 2002.

## List of Publications

**13:** 3 papers, **12:** 1 papers, **11:** 2 papers, **10:** 2 papers, **09:** 1 paper, **08:** 3 papers, **07:** 2 papers, **06:** 3 papers, **05:** 7 papers, **04:** 2 papers, **03:** 1 paper

28. **O Flomenbom**, Single file dynamics in biophysics, Special Issue in Biophy. Rev. Lett. (2014).  
*In preparation*
27. **O Flomenbom**, Biophys. Rev. Lett. **8**(3), 109 (2013).
26. **O Flomenbom**, K. Velonia, M. Cotlet, Biophys. Rev. Lett. **8**(3), 103 (2013).
25. **O Flomenbom**, *Solving single molecules: filtering noisy discrete data made of photons and other type of observables*, *arXiv: 1306.2435* (2013).
24. **O. Flomenbom**, *Fairness in nations*, *arXiv:1112.0262* (2012).
23. **O. Flomenbom**, Adv. Chem. Phys. **146**, 367 (2012). [arXiv:0912.3952](https://arxiv.org/abs/0912.3952)
22. **O. Flomenbom**, EPL **94**, 58001 (2011). [arXiv:1103.4082](https://arxiv.org/abs/1103.4082)
21. **O. Flomenbom**, Phys. Lett. A **374**, 4331 (2010). [arXiv:1008.2323](https://arxiv.org/abs/1008.2323)
20. **O. Flomenbom**, Phys. Rev. E **82**, 031126 (2010). [arXiv:1002.1450](https://arxiv.org/abs/1002.1450)
19. **O. Flomenbom**, Phys. Lett. A **373**, 1405-1408 (2009). [arXiv:0805.4054](https://arxiv.org/abs/0805.4054)
18. **O. Flomenbom**, A. Taloni, Europhys. Lett. **83**, 20004-p1-p6 (2008). [arXiv:0802.1516](https://arxiv.org/abs/0802.1516)
17. **O. Flomenbom**, and R. J. Silbey, Phys. Rev. E **78**, 066105 (2008). [arXiv:0802.1520](https://arxiv.org/abs/0802.1520)
16. **O. Flomenbom**, and R. J. Silbey, J. Chem. Phys. **128**, 114902 (2008). Selected for, [VJB](#)
15. **O. Flomenbom**, and R. J. Silbey, Phys. Rev. E **76**, 041101 (2007). [arXiv:0706.3211](https://arxiv.org/abs/0706.3211)
14. **O. Flomenbom**, and R. J. Silbey, J. Chem. Phys. **127**, 034102 (2007). Selected for, [VJB](#)
13. **O. Flomenbom**, et al, Chem. Phys. Lett. **432**, 371-374 (2006).
12. **O. Flomenbom**, J. Klafter, and R. J. Silbey, Phys. Rev. Lett. **97**, 178901 (2006).
11. **O. Flomenbom** and R. J. Silbey, Proc. Natl. Acad. Sci. USA. **103**, 10907-10910 (2006). Selected for, [VJB](#)
10. **O. Flomenbom** and J. Klafter, J. Chem. Phys. **123**, 064903 (2005). Selected for, [VJB](#)
9. **O. Flomenbom** and J. Klafter, Acta Physica Polonica B **36**, 1527-1535 (2005).
8. **O. Flomenbom**, and J. Klafter, Phys. Rev. Lett. **95**, 098105 (2005). Selected for, [VJB](#)
7. **O. Flomenbom**, J. Klafter, and A. Szabo, Biophys. J. **88**, 3780-3783 (2005).
6. **O. Flomenbom**, R. Amir, D. Shabat, and J. Klafter, J. Lumin. **111**, 315-325 (2005).
5. **O. Flomenbom**, et al, Proc. Natl. Acad. Sci. USA. **102**, 2368-2372 (2005). Selected for, [VJB](#)
4. K. Velonia, **O. Flomenbom**, D. Loos, et al, Angew. Chem. Int. Ed. **44**, 560-564 (2005), Cover.

3. **O. Flomenbom** and J. Klafter, Phys. Rev. E **69**, 041970-7 (2004).
2. **O. Flomenbom** and J. Klafter, Biophys. J. **86**, 3576-3585 (2004).
1. **O. Flomenbom** and J. Klafter, Phys. Rev. E **68**, 041910-7 (2003). Selected for, [VIB](#)

- **Most cited papers:**

PNAS 2005 (~125+), Angew. Chem. 2005 (~75+), BJ 2005 (~45+), PNAS 2006 (~30+), PRE 2003 (~30+), PRE 2004 (~30+), PRL 2005 (~30+).

**List of Publications: Invited papers, contributions in books & books**

**14, 11:** 1 book, **08:** 1 chapter, **05:** 1 chapter and 1 paper, **04:** 1 paper

**6. O. Flomenbom**, *Introduction in a Special Issue: Single File Dynamics: Recent advances and applications* (Biophysical Reviews and Letter, 2014). In preparation

**5. O. Flomenbom**, *Heterogeneous walkers in Rich Environments* (LAMBERT Academic Publishing GmbH & Co. KG, Saarbrücken, Germany, 2011). [ISBN: 978-3-8443-1576-9](#)

**4. O. Flomenbom** and R. J. Silbey, in *Theory, Modeling and Evaluation of Single-Molecule Measurements* (2008), F. L. H. Brown, E. Barkai, H. Yang, M. Orrit Eds. [arXiv:0706.2328](#)

**3. O. Flomenbom** and J. Klafter, Proceedings of SPIE **5845**, 156-164 (2005) in *Noise in complex systems and stochastic dynamics III*, L. B. Kish, K. Lindenberg, Z. Gingl Eds.

**2. O. Flomenbom**, R. Amir, D. Shabat, and J. Klafter, in *Energy Harvesting Materials* (2005), D. L. Andrews Ed.

**1. O. Flomenbom** and J. Klafter, MRS Proceedings **790**, P7.4.1-P7.4.6 (2004) in *Dynamics in Small Confining Systems*, J.T. Fourkas, P. Levitz, M. Urbakh, K. J. Wahl Eds.

**Active Participation in Scientific conferences & invited talks**

**14, 12:** 2 talk, **11:** 1 talk, **10:** 1 talk, **09:** 2 talks, **08:** 3 talks, **07:** 1 talk, **06:** 1 talk, **05:** 1 talk, **04:** 2 talks & 2 posters, **03:** 1 talk & 2 posters, **02:** 1 talk & 1 poster, **01:** 1 talk

\*\*\* Workshop, Majorana Centre (Sicily, Italy), will take place @ September 2014. Organizer & **Speaker**

22. Ongoing webinar about Measuring & Solving single molecules (with the Special Issue in BRL) since Fall 2013

21. Seminar, Bar Ilan University (Ramat Gan, Israel), May 2012. **Speaker**

20. Seminar, Ben Gurion University (Beer Sheva, Israel), March 2012. **Speaker**

19. Seminar, Weizmann Institute of Science (Rehovot, Israel), December 2011. **Speaker**

18. Seminar, Fritz Haber Center, Chemistry Institute, Hebrew University (Jerusalem, Israel), May 2010. **Speaker**

17. Seminar, Technion (Haifa, Israel), April 2009. **Speaker**

16. Symposium, IPR in Osaka University (Osaka, Japan), December 2008. **Speaker**

15. Annual Meeting (Fukuoka, Japan), December 2008. **Speaker**

14. Seminar, Hokkaido University (Hokkaido, Japan), December 2008. **Speaker**

13. Workshop, Leiden University (Leiden, Netherlands), April 2007. **Speaker**

12. Workshop in honor of Yossi Klafter's 60th birthday, Tel-Aviv University (Tel-Aviv, Israel), May 2006. **Speaker**

11. Single-molecule workshop (Telluride, Colorado, USA), August 2005. **Speaker**

10. Biological and Soft Matter Seminar, Tel-Aviv University (Tel-Aviv Israel), November 2004. **Speaker**

9. Chemical Physics Journal Club, NIDDK, NIH (Bethesda, MD, USA), September 2004.

## Speaker

8. GRC conference, Mount Holyoke College (South Hadley, MA, USA), July 2004. **Poster**
7. Israel Chemical Society, Annual Meeting (Tel Aviv, Israel), February 2004. **Poster**
6. MRS Fall Meeting (Boston, MA, USA), December 2003. **Poster**
5. Seminar, NIH (Bethesda, MD, USA), September 2003. **Speaker**
4. Israel Chemical Society, Annual Meeting (Tel Aviv, Israel), January 2003. **Poster**
3. GRC Summer School, Roger Williams university (Bristol, RI, USA), July 2002. **Poster**
2. EU Conference (Leuven, Belgium), October 2002. **Speaker**
1. EU Conference (Berlin, Germany), November 2001. **Speaker**

## Active Participation in Fund raisings and Group meetings

**09:** 1 talks, **08:** 1 talk, **07:** 1 talk, **06:** 1 talk, **05:** 1 talk, **04:** 1 talks, **03:** 1 talk

7. Fund raising presentation, OHV Incubator (Tel Aviv, Israel), November 2009. **Speaker**
6. Group meeting, Hokkaido university (Hokkaido, Japan), December 2008. **Speaker**
5. Group meeting, MIT (Cambridge, MA, USA), April 2007. **Speaker**
4. Group meeting, MIT (Cambridge, MA, USA), April 2006. **Speaker**
3. Group meeting, MIT (Cambridge, MA, USA), November 2005. **Speaker**
2. Chemical Physics student seminar, Tel-Aviv University (Tel-Aviv, Israel), October 2004. **Speaker**
1. Group Meeting, Chemical Physics Department, Tel-Aviv University (Tel-Aviv, Israel), March 2003. **Speaker**

## Other important achievements

- Started promoting the establishment of a new, active and independent scientific organization in Israel, the Israeli scientific Network, [ISN](#), for solving the problem of the “fleeing brains” from Israel abroad (Since January, 2011).
- Released a first free version of software for the analysis of experiments from individual molecules (December, 2010).
- Registered a scientific company (Israel, September, 2009).

## **Collaborators & communicators**

- OF communicating with dozens of labs in each of the three fields in **Research Interests**.
- See the full list of collaborators & communicators [in the field of individual molecules](#), [socio econo physics](#), and [single file dynamics](#)
- The most recent new collaborators include: Ramón Hurtado Guerrero (BIFI, U Zaragoza, ES), Angel Orte (Phys Chem, U Granada, ES), Peter Hinterdorfer (Johannes Kepler University, Linz, AT), Fred Sachs (BUFFALO NY), Fabio Marchesoni (Universita' di Camerino Italy), Francois Peeters (Universiteit Antwerpen BELGUIM), Ramón Castañeda-Priego (University of Guanajuato Mexico)

## Recommendation

- A. Szabo, NIH, USA (<http://www2.niddk.nih.gov/NIDDKLabs/IntramuralFaculty/SzaboAttila.htm>)
- R. J. M. Nolte, University of Nijmegen, Netherlands  
(<http://www.orgchem.science.ru.nl/people/roelandnolte.php>)

\* Post doctoral host: R. J. Silbey, MIT, USA, deceased, 2011.