

Ed Narevicius

Personal Details

Name: Edvardas (Ed) Narevicius

Date of birth: September 1973

Family status: married +2

Immigration date: June 1991

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web:

Education

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| 2005-2008 | Post-doctoral fellow in the group of Prof. Mark G. Raizen at the University of Texas at Austin. |
| 1995-2002 | Ph.D. studies in theoretical chemistry, Technion-Israel Institute of Technology. Thesis supervisor Prof. Nimrod Moiseyev.
Title: "Non Hermitian Quantum Mechanics: Fingerprints of Overlapping Resonances in Observable Quantities" |
| 1992-1995 | B.A. in Chemistry (<i>Summa Cum Laude</i>) Technion-Israel Institute of Technology |

Employment history

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| since 2022 | W3 Professor, Technical University Dortmund. Head, Center for Cold Molecules and Cold Chemistry |
| 2020-2022 | Full Professor, Weizmann Institute of Science |
| 2018-2021 | Head, Department of Chemical Research Support, Weizmann Institute of Science |
| 2015-2020 | Associate Professor, Weizmann Institute of Science |
| 2008-2015 | Assistant Professor, Weizmann Institute of Science |
| 2002-2005 | Senior Scientist, OpTun Ltd. Israel and OpTun Inc. Santa Clara CA (from 2003). |
| 1999-2002 | IDF army service, MAFAT |

Other appointments

Membership in:

- Center for physical sciences and technology, Lithuania, member of the international advisory board.
- ISF physical chemistry committee member 2021-2022
- ISF atomic and molecular and optical physics (AMO) committee member 2017-2019
- Co-chair (with C. Koch) of the second Cold and Controlled Molecules conference, 2016 Israel
- Co-initiator (with J. Kueper, A. Osterwalder, S. Willitsch) and scientific committee member of a new biannual conference series Cold and Controlled Molecules with a first conference 14–19. 9/2014 at Centro Stefano Franscini, Ascona, Switzerland.
- Member of the IMAMPC-2019 scientific committee
- Member of the 5th International Meeting on Atomic and Molecular Physics and Chemistry (IMAMPC-2014) scientific committee.

- Member of the International Advisory Committee of the XXVI International Symposium on Molecular Beams (ISMB-2015).
- Member of the IMAMPC-2021 scientific committee
- Member in the Faculty promotion committee, WIS

Teaching experience

Since 2008 Teaching experience includes courses on: Quantum Mechanics and Molecular Quantum Dynamics, Weizmann Institute Feinberg graduate school
 1995-1999 Teaching assistant in the department of chemistry
 1997 Participated in Dean's committee to update and expand the curriculum at the department of Chemistry, Technion.

Refereeing activities:

Referee for: Nature, Science, Nature Physics, Nature Chemistry, Nature Communications, Phys. Rev. Lett., New Journal of Physics, Optics Letters, J. Phys. B, Molecular Physics, J. Chem. Phys., Phys. Chem. Chem. Phys., Review of Scientific Instruments, ERC advanced grants, ERC consolidator grants, ERC starting grants

International recognition:

Awards:

1989, 1990 The first place in all Soviet Union high school students chemistry competition
 1992, 1993 The President of the Technion prize for excellence in studies
 and 1994
 1995 Alan de Rothschild prize for creativity and science
 1996 Aaron and Miriam Gutwirth Scholarship for outstanding students
 1997 Lisa Meitner Minerva Center Junior prize in Computational Quantum Chemistry, 1997
 1998 Aaron and Miriam Gutwirth Scholarship for outstanding students
 2001 Quantum Systems in Chemistry and Physics Promising Scientist Prize of Centre de Mécanique Ondulatoire Appliquée (CMOA)
 2013 ERC consolidator grant, European Research Council
 2014 The Israel Chemical Society Excellent Young Scientist Prize
 2014 Weizmann Institute Scientific Council prize
 2015 Helen and Martin Kimmel Award for Innovative Investigation, Weizmann Institute

2017	Zehava and Zvi Friedenbergr Prize from the Advancement of Education and Science Fund by the Israel Science Foundation (ISF)
2020	ERC Advanced grant, European Research Council
2022	Alexander von Humboldt professorship award

Scientific productivity:

Funding:

2009-2013 ISF grant 238,000 NIS a year with additional 200,000 USD awarded for equipment purchase. Title "General method to slow and cool paramagnetic atoms and molecules" most of the objectives met with the experimental demonstration of a moving magnetic trap decelerator.

2012-2015 Minerva Science foundation grant awarded EUR 50,000 a year. Title "Towards Cold Chemistry with Magnetically Decelerated Molecular and Atomic Beams". Testing a different approach to cold chemistry with magnetically decelerated species in spin polarized states within a static magnetic trap.

2014-2018 ISF grant 270,000 NIS a year, "Cold reactions in merged beams".

2014-2019 ERC consolidator grant EUR 2,000,000, "Chemistry of the quantum kind".

2015-2018 GIF grant EUR180,000 with C. Koch, "Quantum Control of Penning Ionization Reactions"

2015-2020 Kimell award, Weizmann 1,000,000 USD

2019-2023 ISF grant "Cold chemistry with cold molecules" 300,000 NIS a year

2019-2022 Minerva Science foundation grant awarded EUR 50,000 a year. Title "Atom vortex beams"

2020-2025 ERC advanced grant EUR 2,500,000, "Molecular Bose Einstein Condensate"

2022-2027 Alexander von Humboldt professorship award, EUR 5,000,000

Patents:

1. E. Narevicius, " Method and apparatus for optical mode division multiplexing and demultiplexing", US patent 7,609,918 (2009)

2. E. Narevicius, I. Vorobeichik, Y. Berlatzky, R. Narevich, "Method and Device for Optical Switching and Variable Optical Attenuation", US patent 7,321,705 (2008)

3. I. Vorobeichik; M. Greenberg, Y. Berlatzky, E. Narevicius, R. Narevich, "Method and Apparatus for Optical Mode Conversion", US patent 7,218,814 (2007)

Invited talks at international meetings:

More than hundred invited talks at international conferences, including invited seminars and colloquia.

10 most important publications

1. B. Henson, S. Gersten, Y. Shagam, J. Narevicius, E. Narevicius, "*Observation of Resonances in Penning Ionization Reactions at Sub-Kelvin Temperatures in Merged Beams*", *Science* **338**, 234 (2012)
2. E. Lavert-Ofir, Y. Shagam, A. B. Henson, S. Gersten, J. Klos, P. S. Zuchowski, J. Narevicius and E. Narevicius, "*Observation of the isotope effect in sub-kelvin reactions*", *Nature Chemistry* **6**, 332-335 2014
3. Y. Shagam, A. Klein, W. Skomorowski, R Yun, V Averbukh, C.P. Koch, E. Narevicius, "*Molecular hydrogen interacts more strongly when rotationally excited at low temperatures leading to faster reactions.*" *Nature Chemistry* **7**, 921 (2015)
4. A. Klein, Y. Shagam, W. Skomorowski, P.S. Zuchowski, M. Pawlak, L.M.C. Janssen, N. Moiseyev, S.Y.T. van de Meerakker, A. van der Avoird, C.P. Koch, E. Narevicius, "*Directly probing anisotropy in atom-molecule collisions through quantum scattering resonances.*" *Nature Physics* **13** (2017). <http://dx.doi.org/10.1038/nphys3904>
5. N. Akerman, M. Karpov, Y. Segev, N. Bibelnik, J. Narevicius, E. Narevicius, "*Trapping of Molecular Oxygen together with Lithium Atoms.*" *Phys. Rev. Lett.* **119** 073204, (2017) <https://doi.org/10.1103/PhysRevLett.119.073204>
6. Yair Segev, Martin Pitzer, Michael Karpov, Nitzan Akerman, Julia Narevicius and Edvardas Narevicius, "*Collisions between cold molecules in a superconducting magnetic trap*", *Nature* **572**, 7768, p. 189-193 (2019)
7. Baruch Margulis, Julia Narevicius and Edvardas Narevicius, "*Direct Observation of a Feshbach-resonance by Coincidence-detection of Ions and Electrons in Penning Ionization Collisions*" *Nature Comm.* **11** 3553, (2020).
8. Prerna Paliwal, Nabanita Deb, Daniel M. Reich, Ad van der Avoird, Christiane P. Koch, Edvardas Narevicius, "*Determining the nature of quantum resonances by probing elastic and reactive scattering in cold collisions*", *Nature Chemistry* **13** 94 (2021).
9. Alon Luski, Yair Segev, Rea David, Ora Bitton, Hila Nadler, A. Ronny Barnea, Alexey Gorlach, Ori Cheshnovsky, Ido Kaminer, Edvardas Narevicius, "*Vortex beams of atoms and molecules*" , *Science* **373** 1105 (2021)
10. B. Margulis , K. P. Horn, D. M. Reich, M. Upadhyay, N. Kahn, A. Christianen, A. van der Avoird, G. C. Groenenboom , M. Meuwly, C. P. Koch C. P. & E. Narevicius, "*Tomography of Feshbach Resonance States*", *Science* **380**, 77 (2023).

Languages:

Hebrew, English, Russian, Lithuanian