

Aug., 2021

Curriculum Vitae

Name: Reuven Chen

Faculty of Exact Sciences
Tel-Aviv University

School of Physics and Astronomy

Academic Rank: Full Professor

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Date and place of birth: January, 1939, Israel.

Marital Status: Married, 2 children.

Education:

1958 - 1963	The Hebrew University, Jerusalem	Phys./Math.	M.Sc.
1963 - 1967	The Hebrew University, Jerusalem	Physics	Ph.D.

Title of Master's Thesis: Optical Properties of Iodine Single Crystals.

Name of Supervisor: Dr. A.A. Braner.

Title of Doctoral Dissertation: Electronic Properties of Optical Phenomena and
Electrical Conductivity in Diamonds.

Name of Supervisor: Prof. A. Halperin.

Further Studies:

1977 - 1982	Tel-Aviv University	Operations Research	M.Sc.
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Academic and Professional Experience:

1962	The Hebrew University	Physics	Teaching Asst.
1963 - 1966	Soreq Labs.	Physics	Research Fellow
1966-1967	Tel-Aviv University	Physics	Instructor
1967-1969	Polytech. Inst. Brooklin	Physics	Asst. Prof.
1969-2008	Tel-Aviv University	Physics	Lecturer-Full Prof.
July-Sept. 1971	Queen Mary College, London University	Physics	Senior Visiting Research Fellow
Sept. 1973-	Queen's university	Physics	Visiting Prof.
Aug. 1974	Kingston, Ontario, Canada		
July 1976	Univ. Paris VI, France	Physics	Visit. Res. Fellow
Aug.-Oct.1976	Res. Lab. for Archaeology, Oxford Univ., England	Physics	Senior Visiting Research Fellow
July-Oct.1977	Res. Lab. for Archaeology, Oxford Univ., England	Physics	Senior Visiting Research Fellow
Sept. 1979 - Aug. 1980	Birmingham University England	Physics	Senior Visiting Research Fellow

June-Sept. 1981	Simon Fraser Univ. Vancouver, B.C., Canada	Physics	Visiting Research Scientist
June-Sept. 1983	Naval Res. Labs., White-Oak Silver-Spring, MD., USA	Physics	Expert
June-Sept. 1984	University of Maryland, College Park, MD. USA	Physics	Visiting Prof.
July-Sept. 1987	Oklahoma State Univ.	Physics	Visiting Prof.
June-Sept. 1988	University of Maryland, College Park, MD. USA	Physics	Visiting Prof.
Jan.-Feb. 1989	University of Adelaide, South Australia	Physics	Visiting Prof.
June-Aug. 1989	University of Maryland, College Park, MD. USA	Physics	Visiting Prof.
July-Aug. 1990	University of Maryland, College Park, MD. USA	Physics	Visiting Prof.
July-Aug. 1991	University of Maryland, College Park, MD. USA	Physics	Visiting Prof.
June-Aug. 1992	University of Maryland, College Park, MD. USA	Physics	Visiting Prof.
Sept.-Oct. 1993	University of Rome I	Physics	Visiting Prof.
July-Aug. 1996	University of São-Paolo	Physics	Visiting Prof.
Sept.-Oct. 1997	City University, Hong-Kong	Physics	Visiting Prof.
Sept.-Oct. 1998	City University, Hong-Kong	Physics	Visiting Prof.
June-Oct. 1999	City University, Hong-Kong	Physics	Visiting Prof.
1990-1992	Head of the Special Programs Division, Tel-Aviv University		
1992-1997	Dean of Students, Tel-Aviv University		
1997-1998	Head of the Special Programs Division, Tel-Aviv University		
Oct. 2000-Sept. 2003	Chairman of the Department of Condensed Matter Physics, TAU.		
Oct. 2012- Sept. 2015	Director of the university preparatory courses program.		
July-Oct. 2001	University of NSW, Sydney.	Physics	Gordon Godfrey Visiting Prof.
Aug.-Sept. 2003	McDaniel College, Westminster, USA	Physics	Visiting Prof.
June-July 2004	McDaniel College, Westminster, USA	Physics	Visiting Prof.
Feb.-Mar. 2005	University of NSW, Sydney, Australia	Physics	Visiting Prof.
May-July 2005	McDaniel College, Westminster, USA	Physics	Visiting Prof.
June-Aug. 2006	McDaniel College, Westminster, USA	Physics	Visiting Prof.
May-June 2009	McDaniel College, Westminster, USA	Physics	Visiting Prof.
Oct. 2008-present	Tel-Aviv University		Prof. Emeritus
May-June 2010	McDaniel College, Westminster, USA	Physics	Visiting Prof.
June-July. 2011	McDaniel College, Westminster, USA	Physics	Visiting Prof.
May-June 2012	McDaniel College, Westminster, USA	Physics	Visiting Prof.
May-June 2013	McDaniel College, Westminster, USA	Physics	Visiting Prof.
May-June 2014	McDaniel College, Westminster, USA	Physics	Visiting Prof.
May-June 2017	McDaniel College, Westminster, USA	Physics	Visiting Prof.
Aug-Sept. 2018	McDaniel College, Westminster, USA	Physics	Visiting Prof.

Active Participation in Scientific Meetings:

- 1969 International Conference on Luminescence (Newark, Delaware, USA)
- 1976 Intl. Workshop on Thermally Stimulated Processes (Montpellier, France),
Invited Paper.
- 1978 Intl. Conf. on Luminescence (Paris, France).
- 1978 Specialist Seminar on TL Dating (Oxford, England).
- 1980 Specialist Seminar on TL Dating (Oxford, England).
- 1980 Sixth Intl. Conf. Solid State Dosimetry (Toulouse).
- 1982 Specialist Seminar on TL Dating (Oxford, England).
- 1985 12th Intl. Conf. Math. Prog. (Boston).
- 1986 8th Intl. Congress Sol. St. Dosimetry (Oxford, England).
- 1989 Miniconference on Archaeometry (College Park, MD, USA).
- 1990 6th Int. Spec. Seminar on TL and ESR Dating. (Clermont-Ferrand, France).
- 1992 10th Intl. Congress Solid State Dosim. (Washington DC, USA).
- 1993 7th Intl. Spec. Seminar on TL and ESR Dating. (Krems, Austria).
- 1994 Invited Speaker, VII Congreso Nacional Dosim. TL (Mexico-City, Mexico).
- 1995 11th Intl. Conf. Sol. St. Dosim. (Budapest). Invited Speaker; Member of the
Advisory Sci. Comm. and Associate Editor of the Proceedings.
- 1996 8th Intl. Conf. Lumin. and ESR Dating (Canberra, Australia). Chairman,
Session C.
- 1998 12th Intl. Conf. Sol. St. Dosim.(Burgos, Spain). Member of the Scientific
Advisory Committee; chairman of Session A.
- 1999 9th Intl. Conf. Lumin. and ESR Dating (Rome, Italy).
- 2000 LUMDETR 00, Riga, Latvia.
- 2001 IRPA Regional Congress on Radiation Protection in Central Europe,
Introductory Lecture, (Dubrovnik, Croatia).
- 2001 13th Intl. Conf. Sol. St. Dosim. (Athens, Greece). Member of the Program
Committee; Chairman of Session A.
- 2002 10th Int. Conf. On Luminescence and ESR Dating, (Reno, USA).
- 2002 Intl. Conf. Luminescence and Optical Spectroscopy (ICL'02) (Budapest,
Hungary).
- 2004 14th Intl. Conf. Sol. St. Dosim. (New-Haven, CT, USA). Member of the
Scientific Committee.
- 2005 Int. Conf. on Luminescence and ESR Dating (Koln, Germany).
- 2006 1st Asia-Pacific Conf. Luminescence Dosimetry (APLD2006) Hong-
Kong.
- 2007 Member of the Scientific Committee of the 15th Intl. Conf. Sol. St. Dosim.
Delft, Holland, 4 papers presented, *Guest Editor* of the proceedings in Radiation
Measurements.
- 2009 LUMDETR 09, Krakow, Poland, member of the scientific committee,
Associate Editor of the proceedings.
- 2010 EURODIM 10, Pécs, Hungary.
- 2010 16th Intl. Conf. Sol. St. Dosimetry, Sydney, Australia. Member of the
Scientific Advisory Committee.
- 2011 LED2011, Torun, Poland.
- 2012 International Symposium on Luminescence (ISL 2012), Port Elisabeth, South
Africa.
- 2012 Lumdetr12, Halle, Saale, Germany, member of the scientific committee,
Associate Editor of the proceedings.
- 2013 17th Intl. Conf. Sol. St. Dosimetry, Recife, Brazil, member of the scientific
advisory committee. Invited Lecture.

- 2014 LED2014, Montreal, Canada
 2015 The 10th International Workshop on Ionizing Radiation. Oarai, Japan
 2016 Invited Speaker, 18th Intl. . Conf. Sol. St. Dosimetry, Munich, Germany, member of the scientific advisory committee. Two papers presented.
 2018 Lumder14, Member of the scientific committee, Prague, Czech Republic.
 2019 SSD2019, Hiroshima, Japan. Member of the scientific advisory committee.

Academic and Professional Awards (Prizes, Fellowships, Grants, Scholarships etc.):

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| 1971 | Queen Mary College, Sci. Res. Council fellowship (London, England) | Research on Lunar Samples |
| 1973-4 | NRC Fellowship (Kingston, Canada) | Research |
| 1976 | French SRC Fellowship (Paris, France) | Research |
| 1976, 1977 | SRC Fellowship (Oxford, England) | Research |
| 1979-1980 | SRC Fellowship (Birmingham, England) | Research |
| 1994-6 | TAU Research Foundation | Research |
| 1996-8 | TAU Research Foundation | Research |
| Sept. 2017 | Cape Town LED2017 award for excellence in luminescence research | |
| Sept. 2019, | Recipient of Yamamoto award, SSD19, Hiroshima, Japan. | |

Teaching Experience

I have been teaching courses in physics and mathematics to students of Physics, Engineering, Medicine, Biology, Chemistry and Management. I was selected Distinguished Teacher in the Faculty, 1997.

Membership in Professional Societies:

- 1969- The Israel Physical Society (Israel).
 1969- The American Physical Society (USA).
 1973- The Canadian Association of Physicists (Canada).
 1982- Operations Research Society of America (USA).

Doctoral Students Under Supervision:

<u>Year</u>	<u>Name of Student</u>	<u>Title of Thesis</u>	<u>Academic Institution</u>
1978	Shlomo Winer	Thermally and Optically Stimulated Processes in Diamond.	Tel-Aviv University
1996	Gregory Fogel	Theoretical Investigation of TL Processes	Tel-Aviv University Tel-Aviv University
1997	Mustafa Abu-Rayya	Luminescence and TL in Natural and Synthetic Quartz.	Tel-Aviv University
2003-2008	Ruben Langer	Modelling the contribution of heart rate modulation in RSA.	T-A University

Master Students under Supervision

<u>Year</u>	<u>Name of Student</u>	<u>Title of Thesis</u>	<u>Academic Institution</u>
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1969	S.A.A. Winer	Effects of Various Heating Rates on Glow Curves in ZnS:Er ³⁺ .	Polytech. Inst. of Brooklin
1969	M.P. Pasciuto	TL of CdF ₂ :Yb ³⁺ single Crystals.	Polytech. Inst. of Brooklin
1970	N.S. Mohan	Computer Fitting of Glow Curve Parameters.	Polytech. Inst. of Brooklin
1971	D. Shenker	Methods of Evaluating Crystal Parameters from Glow Curves.	Tel-Aviv University
1991	R. Darvas	Neutron Radiation Damage in Silicon Detectors.	Tel-Aviv University
1991	N. Ezra	Minimax Location Problems in Two Dimensional Space	Tel-Aviv University
1996	A. Hag-Yahya	Theoretical Study of TL.	Tel-Aviv University
2008	D. Kuzmin	Luminescence properties of halide crystals	Tel-Aviv University

Citation Index:

My work has been cited in the scientific literature 10935 times through Aug. 2021, according to Google Scholar count. H-index=45.

Citation Classic:

The paper "On the Calculation of Activation Energies and Frequency Factors from Glow Curves", J. Appl. Phys. 40, 570-585 (1969) has been selected in 1990 by the Institute for Scientific Information as a "Citation Classic".

Editorial Positions, International Scientific Journals:

1990-2009 "Radiation Measurements", Member, Editorial Board. Pergamon Press.
2009- "Radiation Measurements", Associate Editor.

Conference Scientific Advisory Committees:

1. Member of the Scientific Committee of the VII Congreso Nacional sobre Dosimetria Termoluminiscente y Temas Afines, Mexico-City, Sept., 1994.
2. Member of the 11th Intl. Solid State Dosim. Conf. Scientific Advisory Committee, July 1995, Budapest. Assoc. Editor of the Proceedings.
3. Member of the Scientific Committee, Int. Conf. Rad. Eff. on Semiconducting Materials, Detectors and Devices, March 1996, Florence.
4. Member of the Scientific Committee, 12th Solid State Dosimetry Conf., Burgos, Spain, July 1998.
5. Member of the Scientific Committee, 3rd International Conference on Radiation Effects on Semiconductor Materials, Detectors and Devices (Firenze, Italy).
6. Member of the Organizing and Scientific Committee, 13th Solid State Dosimetry Conf., Athens, 2001, Chairman of the Program Committee.
7. Member of the Scientific Advisory Board, 14th Solid State Dosimetry Conf., Yale Univ., USA, 2004.

8. Member of the Scientific Advisory Board and Associate Editor of the Proceedings, 15th Solid State Dosimetry Conf., Delft, 2007.
9. Member of the Scientific Advisory Committee, LUMDETR 2009, Krakow, Poland, July, 2009.
10. Member of the Scientific Advisory Board, 16th Solid State Dosimetry Conf., Sydney, Australia, 2010. Guest Editor of the proceedings.
11. Member of the Scientific Advisory Committee and Guest Editor of Proceedings, IEE2011, Toruń, Poland, 2011.
12. Member of the Scientific Advisory Committee, LUMDETR 2012, Halle, Saale, Germany, September, 2012, Guest Editor of the Proceedings.
13. Member of the Scientific Advisory Board, 17th Solid State Dosimetry Conf., Recife, Brazil, 2013, Guest Editor of the proceedings.
14. Member of the Scientific Advisory Committee and Guest Editor of Proceedings, LED2014, Montreal, Canada, 2014.
15. Member of the Scientific Advisory Committee, LUMDETR 2015, Tartu, Estonia, September, 2015, Guest Editor of the Proceedings.
16. Member of the Scientific Advisory Board, 18th Solid State Dosimetry Conf., Munich, Germany, July 2016, Guest Editor of the Proceedings.
17. Member of the Scientific Advisory Committee and Guest Editor of Proceedings, LED2017, Cape Town, South Africa, 2017.
18. Member of the Scientific Advisory Committee, LUMDETR 2018, Prague, Czech Republic, September, 2018, Guest Editor of the Proceedings.
19. Member of the Scientific Advisory Board, 19th Solid State Dosimetry Conf., Hiroshima, Japan, September 2019, Guest Editor of the Proceedings.

Administrative Capacity:

1990-1992	Head of Special Programs Unit	Tel-Aviv University
1992-1997	Dean of Students	Tel-Aviv University
1997-1998	Head of Special Programs Unit	Tel-Aviv University
2000-2003	Chairman, Department of Condensed Matter	Tel-Aviv University
2012-2015	Director, preparatory courses program.	Tel Aviv University

Recent Scientific Activity:

In the recent years, my work concentrated on the study of a number of subjects associated with thermoluminescence (TL) and optically stimulated luminescence (OSL) as well as other luminescence phenomena.

The experimental work included the study of the well known $\text{Al}_2\text{O}_3:\text{C}$ material used quite broadly for TL dosimetry, as well as on different halide samples. In the former, a very strong dose superlinearity of some high temperature peaks has been discovered for the first time.

A simulation work has shown that the decay of OSL and photoluminescence may result from the existing theory of traps and centers when retrapping has an important role. The decay curve was found to assume the shape of stretched-exponential, a quite ubiquitous behavior in relaxation processes. However, unlike in previous works, this behavior is not ascribed to a disorder in the sample.

In a theoretical-simulation work done with colleagues from the US, some effects have been studied. The sensitization effect in quartz, the common material used for TL

dating and in particular its thermal activation characteristic (TAC) has been given a new interpretation.

Another important subject has been the explanation of the non-monotonic dose dependence of TL and OSL. The effect has been associated with competition both during excitation and heating. Another subject studied was the duplicitous TL peak ascribed to the occurrence of electron and hole traps, which may also give a new interpretation to the anomalous “Auger” thermally stimulated electron emission (TSEE). Also were studied Linear-Modulated OSL (LM-OSL) and its dose dependence.

Another work investigated, along with groups from the UK, US, Poland, Denmark and China, was developing a new method for quartz OSL dating.

Some more phenomena have been investigated recently, namely the concentration quenching of TL and the two-stage thermal stimulation of TL which, under certain circumstances may lead to anomalous stability of the TL signal. This was followed by a work on the thermally assisted OSL, which has also been explained by the two-stage model.

The theoretical concept of the quasi-equilibrium assumption as related to TL and OSL has been critically examined. Also, the anomalous dependence of TL intensity on the heating rate has been studied as well as the stability of the TL and OSL signals over long periods of time.

Finally, models of TL and OSL based on the occurrence of two-electron traps or two-hole centers have been developed. These could explain the effects of superlinear dose dependence as well as the non-monotonic dose dependence of these phenomena.

Referee for:

Journal of Computational Physic	Phys. and Chem. of Minerals
Journal of Polymer Science	Surface Science
Journal of Physics D: Appl. Phys.	J. of Luminescence
Journal of Physics C: Sol. St. Phys.	J. Therm. Anal.
Nuclear Tracks and Rad. Meas.	IEEE Trans., Elect. Eng.
Naval Research Logistics Quarterly	Transportation Science
Information Science and Ops. Res.	Operations Research
Journal of Physics; Condensed Matter	Archaeometry
J. Oper. Res. Soc.	RAIRO-OR
National Science Foundation	US-Israel Bi-National Fund
Australian Research Grants Scheme	Israeli Basic Res. Foundation
Radiation Measurements	J. Phys.: Condensed Matter
The Israel Chem. Soc.	Measurement Sci.+technol.
Comput. Optim. and Applications	GIF
J. Electrochem. Soc.	Canad. J. Phys.
Res. Comm. City Univ. Hong-Kong	Phys. and Chemistry Minerals
BSF	Reviews of Scientific Instruments
J. Phys. Chem. Solids	Earth and Planetary Science Letters
International Journal of Nuclear Energy	Nuclear Instruments and Methods A
Nuclear Instruments and Methods B	Appl. Radiat. Isot.
ISF	Radiat. Prot. Dosim.
J. Appl. Phys.	Geochronometria
J. Electrostatics	Int. J. Modern Phys.
J. Alloys Comp.	TOP (Oper. Res.)

Physica B
Europ. J. Oper. Res.
Hong Kong Univesity Grants Comm.
J. Polym. Sci.
J. Optics A: Pure and Applied Optics
Chem. Phys. Lett.
Int. Sci. Foundation
Naval Res. Log. Quart.
IEEE Trans. Elect. Insul.
Nucl. Tracks Rad. Meas.

Physica Scripta
Res. Grants. Council Hong Kong
Israel Sci. Found.
Applied Spect.
Sudies on Locational Analysis
Israel Chem. J.
Inf. Sci. and Oper. Res.
Archaeometry
RAIRO-OR
J. Comput. Sci.