



האגף האקדמי

Name: **Rachela Turgeman**

Date: **14/11/22**

## **CURRICULUM VITAE**

### **1. Personal Details**

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### **2. Higher Education**

יש לציין בסדר כרונולוגי יורד את שמות המוסדות ושמות המחלקות בהן נלמדו התארים, מועדי הלימודים, שם התואר שהתקבל ותאריך קבלתו.

#### **A. Undergraduate and Graduate Studies**

<b>Period of Study</b>	<b>Name of Institution and Department</b>	<b>Degree</b>	<b>Year of Approval of Degree</b>
2001-2005	Bar Ilan university	Ph.D	2006
2000-2001	Bar Ilan university	.M. A	2001
1996-1999	Bar Ilan university	B.Sc	2000

**B. Post-Doctoral Studies**

בפוסט-דוקטורט יש לציין את שם המנחה או ראש המעבדה/המארח

Period of Study	Name of Institution, Department and Host	Degree	Year of Completion
2005	Weizmann Institute of science/ Department of Surface and Interface  Prof. Igor Lubomirsky	Post- doctorat	2006

**3. Academic Ranks and Tenure in Institutes of Higher Education**

יש לציין בסדר כרונולוגי יורד את הדרגה, המשרה או המעמד ואת תקופת השהות בהם, כולל הדרגה הנוכחית. יש לציין אם יש קביעות. משרות בחו"ל, לרבות בתקופות שבתון וחל"ת, יש לציין במינוח המקורי. יש לציין משרות ודרגות רק מאז לימודי הדוקטורט. בפוסט-דוקטורט יש לציין את שם המנחה וראש המעבדה/המארח.

Dates	Name of Institution and Department	Rank/Position
01/09/2005-31/08/2005	Weizmann Institute of science/ Department of Surface and Interface  Prof. Igor Lubomirsky	Post-doctorat

#### 4. **Scholarly Positions and Activities outside the Institution**

1. Editing of Videotaped lecture of M. A Science Teaching studied Feinberg Graduate School, 2015-2016. Participation in Scholarly Conferences.
2. A member of the steering team of filmed lessons on "Powers and Levers" by Daniel Shamir, Science Teaching Department' Weizmann Institute of Science, 2015.
3. Manages a website for physics students, Science Teaching Department' Weizmann Institute of Science, 2014-2016.

##### a. **Active Participation**

<b>Date</b>	<b>Name of Conference</b>	<b>Place of Conference</b>	<b>Subject of Lecture/Discussion</b>	<b>Role</b>
05.12.2021	Annual national conference of Physics teachers	Weizmann Institute of Science	Physical principles in halachic technological applications - designing a 'Sabbath command' for an elevator on a model	Lecture
15.05.2018	The annual national conference of the physics teacher communities	Weizmann Institute of Science	Physics Teachers as Moderates	Lecture
19.12.2017	Annual national conference of Physics teachers	Weizmann Institute of Science	Cross-age physical exploration activities	Lecture
26.12.2016	Annual national conference of Physics teachers	Weizmann Institute of Science	Advanced technology as a tool for extracurricular physical learning	Lecture

14.12.2015	Annual national conference of Physics teachers	Weizmann Institute of Science	Regulation of learning processes by Project-based learning	Lecture
22.12.2014	Annual national conference of Physics teachers	Weizmann Institute of Science	A project on radiation and the polarizer in light of Malos' law and applications of the phenomenon in photography, a study unit for alternative assessment	Lecture
05.06.2014	Annual national conference of Physics teachers	Weizmann Institute of Science	Innovation in teaching physics	Lecture
09.05.2012	Inquiry Teaching	Weizmann Institute of Science	Science Inquiry Teaching – from Theory for Practice	Lecture

**b. Organization of Conferences or Sessions**

<b>Date</b>	<b>Name of Conference</b>	<b>Place of Conference</b>	<b>Subject of Conference/ Role at Conference/ Comments</b>	<b>Role</b>
2012-till now	Physics Olympiad	Lev Academic Center	Physics Olympiad	Member of the academic committee

## 5. Invited Lectures\ Colloquium Talks

Date	Place of Lecture	Name of Forum	Presentation/Comments
16.05.2019	Bar Ilan University	The wisdom of action conference	Quality physical teaching
2018 May	Dan Hotel Jerusalem	Public Service Engineers Seminar	Nanotechnology and advanced materials
11.03.2018	The Israeli Green Council	Innovation in teaching	Development of multi-channel discourse based on video didactics
10.05.2017	Virtual conference of the Ministry of Education	Unity versus uniqueness	Learning by exploring physics
May 2008	MOFET association	A national conference of MOFET teachers	The teaching of physics in a multidisciplinary aspect

## 8. Teaching

### a. Courses Taught in Recent Years

יש לערוך את הפרטים בטבלה לפי הכותרות שלהלן. קורס שחוזר על עצמו אין צורך לרשום מספר פעמים אלא לציין את השנים שניתן.

Year	Name of Course	Type of Course Lecture/Seminar/ Workshop/High Learn Course/ Introduction Course (Mandatory)	Degree	Number of Students
-2021 till now	General Physics	Lecture	B.Sc	35
2022- till now	Breakthrough creative thinking	Seminar	B.Sc	23

2022- till now	Introduction to Statistics	Lecture	B.Sc	35
2022- till now	Introduction to the physics of medical imaging	Lecture	B.Sc	35
2022- till now	Waves and modern physics	Lecture	B.Sc	35

## **12. Professional Experience**

כאן המקום לציין ניסיון מקצועי אחר (תפקידים ציבוריים) ומקומות עבודה נוספים (מחוץ לאקדמיה).

1. Head of the Committee for the Promotion of Science Labs Document, Ministry of Education.
2. A guide of Physics teachers and Science teachers, Ministry of Education.
3. High school physics teacher, Ministry of Education

## **PUBLICATIONS**

### **A. Ph.D. Dissertation**

Study of ZnO crystal growth on SAMs surfaces of alkylsilane compounds and different nanoparticles, September 2005, 130 pages, Hebrew, Bar Ilan university, Prof. Aharon Gedanken.

### **A. Authored Books – Published**

1. Development of professional leadership of teachers in physics teacher communities Professional learning communities of science and math teachers, A collection of articles, MOFET Institute, 171-176.

### **D. Articles in Refereed Journals**

#### **Published**

1. **Turgeman R**, Gershevitz O, Deutsch M, Ocko B. M, Gedanken A, Sukenik C. N. "Crystallization of highly oriented ZnO microrods on Carboxylic Acid-Terminated of SAMs". **CHEMISTRY OF MATERIALS** 17 (20): 5048-5056 OCT 4 2005.
2. **Turgeman R**, Tirosh S, Gedanken A. "Growing ZnO crystals on magnetite nanoparticles " **CHEMISTRY-A EUROPEAN JOURNAL** 10 (7): 1845-1850 APR 2 2004



3. **Turgeman R**, Gershevitz O, Palchik O, , Deutsch M, Ocko B. M, Gedanken A, Sukenik C. N. "Oriented growth of ZnO crystals on self-assembled monolayers of functionalized alkyl silanes"  
**CRYSTAL GROWTH & DESIGN** 4 (1): 169-175 JAN-FEB 2004
- "Crystallization of ZnO on crystalline magnetite nanoparticles in the presence of ultrasound radiation", by R. Turgeman and A. Gedanken. January 2004  
[Crystal Growth & Design](#) 102(1).
- 4.
5. Aurbach D, Lu Z, Schechter A, Gofer Y, Gizbar H, **Turgeman R**, Cohen Y, Moshkovich M, Levi E. "[Prototype systems for rechargeable magnesium batteries](#) " **NATURE** 407 (6805): 724-727 OCT 12 2000
6. Gofer Y, **Turgeman R**, Cohen H, et al. "XPS investigation of surface chemistry of magnesium electrodes in contact with organic solutions of organochloroaluminate complex salts " **LANGMUIR** 19 (6): 2344-2348 MAR 18 2003
7. Aurbach D, Gofer Y, Lu Z, Schechter A, Chusid O, Gizbar H, Cohen Y, Ashkenazi V, Moshkovich M, **Turgeman R**, Levi E "A short review on the comparison between Li battery systems and rechargeable magnesium battery technology"  
**JOURNAL OF POWER SOURCES** 97-8: 28-32 Sp. Iss. SI JUL 2001
8. Aurbach D, Gofer Y, Schechter A, Chusid O, Gizbar H, Cohen Y, Moshkovich M, **Turgeman R**  
"A comparison between the electrochemical behavior of reversible magnesium and lithium electrodes "  
**JOURNAL OF POWER SOURCES** 97-8: 269-273 Sp. Iss. SI JUL 2001.
9. Aurbach D, **Turgeman R**, Chusid O, Gofer Y  
"Spectroelectrochemical studies of magnesium deposition by

in situ FTIR spectroscopy " **ELECTROCHEMISTRY COMMUNICATIONS** 3 (5): 252-261 MAY 2001

10. Aurbach D, Moshkovich M, Schechter A, **Turgeman R**  
"Magnesium deposition and dissolution processes in ethereal grignard salts solutions using simultaneous EQCM-EIS and in-situ FTIR spectroscopy" **ELECTROCHEMICAL AND SOLID STATE LETTERS** 3 (1): 31-34 JAN 2000.
11. The community of physics teachers of the AMIT network is leading a change in the learning culture, TEHUDA 37 (1): 54-57, The journal of Physics teachers, National center for physics teachers, The department of Science Teaching, Weizmann Institute of Science.

## **H. Other Scientific Publications**

### **Published**

1. A document for planning laboratories for science subjects in secondary education, Pedagogical Secretariat, October 2020, Ministry of Education.

### **I. Other Publications**

1. "Inspiration for experiential physics teaching", *It's time for education journal*, 2015.
2. "Who said students don't appreciate their teachers?" , *It's time for education journal*, 2015.
3. Teacher Day 2015, Interview in Reshet B Radio.
4. Teaching physics through toys, Interview in Reshet B Radio, Microscope program.
5. [A collection of publications in the popular media.](#)
6. Science education a strategic resource, Channel 7, 2021.

### **J. Other Works Connected with my Scholarly Field**

1. Development of a research curriculum for high school students visiting the Zern particle accelerator.

2. Development of teaching materials for teaching physics for heterogeneous populations.

3. Development of teaching materials for students competing in international physics competitions.

### **L. Summary of my Activities and Future Plans**

The guiding line of my future scientific work is the study of the physics of medical imaging devices. Development of advanced technologies to improve the sharpness of the resolution of the imaging devices with minimal exposure to radiation.