# Ron Blonder – CV, July 2021

## I.
## A. Personal Details:

Name: RON BLONDER
Date of Birth: 26/8/1969
Place of Birth: Israel
Gender: Female

## Contact Information:

Mailing Address: Department of Science Teaching,
Weizmann Institute of Science, Rehovot, 76100, Israel.
Phone: 050-3147007, 08-9342451, in WIS: 2451
E-mail: ron.blonder@weizmann.ac.il
Professional site: http://www.weizmann.ac.il/st/blonder/

## B. Education:

1993-1999 Ph.D. studies and research in chemistry (direct PhD program). Advisor: Prof. Itamar Willner, the Hebrew University of Jerusalem.
Thesis title: *"Control of Structure and Function of Biomaterials by External Triggering Signals"*.
1990-1993 B.Sc. in Chemistry with Distinction, the Hebrew University of Jerusalem.
2009-2010 Teaching certificate, Department of Science Teaching, Weizmann Institute of Science

## C. Employment History:

| | |
|---|---|
| 2016-present | The Weizmann Institute of Science, Associate Professor at the Department of Science Teaching, Head of the chemistry group. |
| 2011- 2016 | The Weizmann Institute of Science. Senior Scientist at the Department of Science Teaching. |
| 2006-2010 | The Weizmann Institute of Science. Research Associate (Amit) at the chemistry group in the Department of Science Teaching. |
| 2001-2006 | Hebrew University of Jerusalem. Chemistry Coordinator of the Belmonte Science Laboratories Center, at the Authority of the Community and Youth. |
| 2005-2006 | Hebrew University of Jerusalem. Director of the Belmonte science Laboratories center, Authority of the Community and Youth. |

## E. Other Appointments:

2021-present, An editor of the journal *International Journal of Science Education*.

2020-2021, Head of MALAG evaluation committee for quality of science teaching programs in all education colleges in Israel (responsible for preparation of science teachers).

2020, A member of an emergency committee of experts of the Chief Scientist of the Ministry of Education that was called by the Minister of Education to provide position paper related to teacher PD for online teaching during the pandemic.

2019-present, Head of the Rothschild-Weizmann Masters' for active teachers.

2019-present, A member of the editorial board of the journal - Research and Practices in Science Education, Mathematics and Technology.

2018, A member of MALAG committee that evaluate science education program for science teachers in two education colleges.

2018-present, A member in The Research and Information Committee, Meital - Learning Technologies National Center.

2018-present, A member in the Institutional Research Board (IRB-EDU) responsible for ethical standards of education research at the Weizmann Institute of Science.

2018-present, A member in a committee of the Blemonte Laboratory Center, Planning for the 2030 of regional science laboratories centers.

2019, Editorial Advisory Board of the book: Mobile Technologies in Educational Organizations, a volume in the Advances in Educational Technologies and Instructional Design (AETID) Book Series, IGI Global.

2019, A guest editor of a Special issue on Chemistry Education in the *Israel Journal of Chemistry*.

2017-present, A member of the Editorial Advisory Board for the *Journal of Chemical Education.*

2016-present Representative of Israel at the Division of Chemical Education of EuCheMS, the European Association for Chemical and Molecular Sciences.

2011-2018 A member of the Editorial Review Board of *Journal of Nano Education* (http://www.aspbs.com/jne/)

2011-present A member in the Chemistry Committee in the Ministry of Education.

2008-2014 A member in a committee of the Ministry of Science dealing with regional science laboratories centers for youth in Israel.

2008-Present PI of the National Chemistry Teachers' Center at the Department of Science Teaching.

2008-Present Current teaching experience in the Weizmann Institute of Science, Fienberg School:

- Introduction to Materials and Nanotechnology
- Introduction to Science Education
- Nanotechnology: Bridging between Research and Class
- Primer Materials for Science Teaching (adaptation to education for the course of Prof. Lubomirski)
- Advanced Methods in Organic Synthesis (adaptation to education for the course of Prof. Hassner)
- Coordinator of chemistry teacher rotations in the chemistry laboratories
- Coordinator of the interdisciplinary seminar of the Rothschild-Weizmann program

1999-2001 Coordinator of the "young thinker" program and a member in the leading management team at the Branco Weiss Institute for the developing of thinking.

1993-1999 Assistant Teacher in the Chemistry Institute at the Hebrew University of Jerusalem, in the following courses: Advanced Organic Chemistry and Organic Physical Chemistry.

Tutor in the following laboratory courses: Basic Organic Chemistry, Advanced Organic Chemistry and Advanced Physical Chemistry, Physical-Organic Chemistry.

## F. International Recognition:

Awards:

1990 – Dean award for B.Sc. Excellence
1991 – Dean award for B.Sc. Excellence
1992 – Dean award for B.Sc. Excellence
1992 – "**Intel–Dean**" award for excellence in science studies
1993 – Rector award for M.Sc
1995 – "**Kaye**" Innovation award
1995 – "**Farkas**" award for outstanding research work in light induced processes.

1996 – "**Academic Women**" organization award.
1996 – "**Clore Scholarship**" on the basis of academic excellence (1996-1998)
1997 – "**Shlomiuk**" award for outstanding research study
2015 –"**Materials Research Society (MRS)** Foundation Grassroots Grant for educational innovation"

International organizing committees

1. Organizer and chairperson of chemical education session at the The 73th Meeting of the *Israel Chemical Society*, 2008, Jerusalem, Israel.
2. Member of the organizing committee of "The undergraduate laboratories: Traditional and Modern Approaches", *Sefad Scientific Workshops*, 2008, Sefad, Israel.
3. Organizer of the 3rd consortium meeting of the *European project PROFILES*, Ein-Gedi, Israel.
4. Member of the organizing committee of the 78th Meeting of the *Israel Chemical Society*, 2013, Tel-Aviv, Israel.
5. Member of the organizing committee of the 33rd Israel Vacuum Society conference -IVS 2015, 2015, Weizmann Institute of Science, Rehovot, Israel.
6. Chair of the organizing committee of Modern Teaching Methods and Soft Skills Development in Science conference, 2018, Weizmann Institute of Science, Rehovot, Israel.
7. Organizing committee responsible for Nano-Education sessions and activies. *NanoIsrael 2018 Meeting*, 2018, Jerusalem, Israel.
8. Chair of the organizing committee of 15th ECRICE conference, 2020, Weizmann Institute of Science, Rehovot, Israel.

International meetings

***Invited talks:***

**Blonder, R.** (2005). Smoking cigarettes & water-pipes from a scientific point of view. (lecture). The 70th Meeting of the *Israel Chemical Society*, p.104, Tel-Aviv, Israel.

**Blonder, R.** (2006). Cognitive coaching as means of improving the teaching quality of laboratory instructors. (lecture). The 71th Meeting of the *Israel Chemical Society*, 2006, Tel-Aviv, Israel.

**Blonder, R.** (2007). Questions are the answer: Results of advanced inquiry laboratory activity. (seminar lecture). The Open University, Raanana, Israel.

**Blonder, R.** (2008). Open-ended laboratory experiments based on advanced instrumentation: Analyzing high-school students' inquiry questions. Sefad Scientific Workshops, 2008, Sefad, Israel.

**Blonder, R.** (2009). Challenges in the chemistry laboratory: Research about students' questions. (seminar lecture). The Department of Science Teaching, The Weizamnn Institute of Science, Rehovot, Israel.

**Blonder, R.** (2009). Challenges in the chemistry laboratory: Research about students' questions. (seminar lecture). The Department of Science Teaching, The Hebrew University of Jerusalem, Jerusalem, Israel.

**Blonder, R.**, & Rosenfeld, S. (2010). *"ekoloko"* the biggest virtual community in Israel: Children's Informal Science Learning in a Multi-User Virtual Environment (seminar lecture). Department of Learning, Teaching & Supervision, University of Haifa, Haifa, Israel.

**Blonder, R.**, & Rosenfeld, S. (2010). *"ekoloko"* the biggest virtual community in Israel: Children's Informal Science Learning in a Multi-User Virtual Environment (seminar lecture). Department of Netvision Institute for Internet Studies, Tel Aviv University, Tel Aviv, Israel.

**Blonder, R.** (2011). Atomic Force Microscopy: Connecting high school chemistry to the nanoworld. The 76th Meeting of the *Israel Chemical Society*, Tel-Aviv, Israel.

**Blonder, R.** (2013). Zooming into NanoEducation. The final conference of an EU project "*Nano -Tech Science Education"*. (Key note talk). Istanbul, Turkey.

**Blonder, R.** & Rap, S. (2014). Social networks for chemistry education. The 79th Meeting of the *Israel Chemical Society*, Tel-Aviv, Israel.

**Blonder, R.** & Sakhnini, S. (2014). Essential concepts of nanotechnology for high School and university undergraduates. Friday Institute for Educational Innovation
BB&T Multimedia Classroom. NCSU, NC, USA.

**Blonder, R.**, & Rap, S., (2014). Learning discourse in social networks: Chemistry teaching on Facebook (lecture), *Social networks and learning: multidisciplinary aspects*. The Hebrew University of Jerusalem, Jerusalem, Israel.

**Blonder, R.,** & Rap, S., (2015). Chemistry between chemistry teachers and students when they meet on the social networks (lecture), *Students, teachers and social networks multidisciplinary aspects*. Tel Aviv University, Tel-Aviv, Israel.

**Blonder, R.** & Benny, N. (2016). Interactions between chemistry teachers and a gifted student in a regular chemistry class. *The 81th Annual Meeting of the Israel Chemical Society*, Tel-Aviv, Israel.

**Blonder, R.,** & Sakhnini, S. (February 2016). Participation of high school students in scientific conferences: The case study of NanoIsrael 2014. *NanoIsrael 2016 Meeting*, Tel-Aviv, Israel.

**Blonder, R.** (April, 2017). Learning science through contemporary research and the integration of Responsible Research and Innovation (RRI) in science education. *10th Conference on Science Education, of the Greek Association for Science Education.* Rethymno, Crete.

**Blonder, R.** (May, 2017). Nano goes to school: Bridging the gap between contemporary research and school science. *The 3rd International Symposium: Nanotechnology from Academia to Industry*. Holon, Israel.

**Blonder, R.** (September 2018). Lessons that chemistry education can take from nanotechnology. *The 16th ECRICE conference*, Warsaw, Poland.

**Blonder, R.** (October 2018). Nano-Education Panel. *NanoIsrael 2018 Meeting*, Jerusalem, Israel.

**Blonder, R.** (November 2018). Lessons that chemistry education can take from nanotechnology. *Nordic Chemistry Learning 2018 conference*, Hosted by Department of Chemistry, University of Jyväskylä, Finland.

**Blonder, R.** (February 2019). The nano-dimension: a suggestion of a new dimension to the Johnstone's chemistry triangle. *The 84th Annual Meeting of the Israel Chemical Society*. Tel-Aviv, Israel.

**Blonder, R.** (June 2019). The RRI approach in science education. *Future cybersecurity innovations embracing societal concerns: National workshop*. Tel-Aviv University, Israel.

**Blonder, R.** (July 2019). The importance of the nano-dimension when we add the human-dimension to chemistry education. *IUPAC 2019. 47th World Chemistry Congress*, Paris, France.

**Blonder, R.** (February 2020). Sustainable Development Goals and systems thinking in chemistry education. The 85th Meeting of the *Israel Chemical Society*, Tel-Aviv, Israel.

**Blonder, R.** (July 2020). 26th IUPAC International Conference on Chemistry Education (ICCE 2020). Postponed to January 2021

**Blonder, R.**, and Marchak, D. (August 2021). *IUPAC| CCCE 2021 48th World Chemistry Congress*. Re-thinking a traditional teaching practice in molecular geometry to aid visualization by implementation of neuropedagogy (online conference).

**Blonder, R.** (October 2021). Remote outreach of authentic nanotechnology program for high school teachers and students. *NanoIsrael 2021 Meeting*, Jerusalem, Israel.

***Other presentations (in peer reviewed international selective conferences):***

**Blonder, R.** (2005). How to mediate between young people & advanced scientific equipment. (lecture). *The 18th Biennial ChemEd. Conference*, p. 74, Vancouver, Canada.

**Blonder, R.** (2006). Harmful results of smoking cigarettes and water-pipes: A science laboratory for all. (poster). *National Association for Research in Science Teaching (NARST) Annual International Conference*, New Orleans, LA.

Ophir, E., **Blonder, R.**, Dover, S., Dekel, A. (2006). Are you tertiary ready? Experimental training towards university. (lecture). *5th international workshop on secondary school biology education*, Heidelberg, Germany.

**Blonder, R.** (2007). Use of advanced equipments and instruments for inquiry experiments opens up new directions for students' questions. (poster). *ESERA Malmö*, Sweden.

**Blonder, R.** (2008). Using gas chromatography for inquiry experiment opens new directions for students' questions. (poster). *The 73th Meeting of the Israel Chemical Society*, 2008, Jerusalem, Israel.

Hofstein, A., Mamlok-Naaman, R., **Blonder, R.**, & Kipnis, M. (2008). Modules developed by the partners of PARSEL, *NARST 2008 Annual Meeting*, Impact of Science Education Research on Public Policy, Baltimore, USA.

**Blonder, R.**, Mamlok-Naaman, R., Hofstein, A. (2008). Teaching chemistry and science as relevant and popular for students at 8 European nations in the PARSEL project (lecture). 20th Biennial Conference on Chemical Education, Bloomington, Indiana.

**Blonder, R.** (2008). Small changes make the learning in the laboratory different (Lecture). 20th Biennial Conference on Chemical Education, Bloomington, Indiana.

**Blonder, R.** (2009). Small changes in the inquiry laboratory make a BIG different in the learning process (lecture). ESERA, Istanbul, Turkey.

Rosenfeld, S., & **Blonder, R.** (2009). When was the last time you saved a world? Children's informal science learning in a Multi-User Virtual Environment (MUVE) (lecture). ESERA, Istanbul, Turkey.

**Blonder, R.**, Mamlok-Naaman, R., Hofstein, A. (2009). Open-ended laboratory xperiments based on advanced instrumentation: Analyzing high-school students' inquiry questions (lecture). 2nd International Seminar on Research on Questioning, Aviero, Portugal

**Blonder, R.**, & Rosenfeld, S. (2010). When was the last time you saved a world? Children's informal science learning in a multi-user virtual environment (MUVE) (lecture). Learning in the Technological Era: Chais Conference on Instructional Technologies Research, Raanana, Israel.

Tuvi-Arad, I., & **Blonder, R.** (2010). Continuous symmetry & chemistry teachers: learning advanced chemistry content through novel visualization tools (lecture).
*Learning in the Technological Era: The 5th Chais Conference on Instructional Technologies Research*, Raanana, Israel.

**Blonder, R.** (April 2010). Using a teaching model to enhance understanding of nanochemistry (lecture). 239th ACS National Meeting, San Francisco, CA.

Mamlok-Naaman, R., Hofstein, A., & **Blonder, R.** (August, 2010). A Three-stage Model for enhancing the PCK of chemistry teachers. ICCE 2010, Taipei, Taiwan.

**Blonder, R.**, Hofstein, A., R., Mamlok-Naaman (June 2010). A three-stage model for developing CK and PCK of chemistry teachers (lecture). The 10th European Conference on Research in Chemistry Education (ECRICE), Krakow, Poland.

**Blonder, R.** (September 2011). (Presenter and Symposium organizer). Teaching high-school teachers nanotechnology with a "user-friendly" teaching model In: *Introducing high-school teachers into the nano-era: Research into four nanoeducation programs*. ESERA, Lyon, France.

Mandler, D., Mamlok-Naaman, R., **Blonder, R.,** Hofstein, A. (September 2011). Chemistry in an environmental context: Research into a context-based learning approach. ESERA, Lyon, France.

Mamlok-Naaman, R., **Blonder, R.,** Levy Nahum, T., Hofstein, A. (September 2011). Design of a CPD model and inter-related teacher intervention towards teacher ownership. ESERA, Lyon, France.

**Blonder, R.,** Sakhnini, S. (July 2012). Nanotechnology: From teacher professional development to junior high school. ICCE/ECRICE, Rome, Italy.

**Blonder, R.** (April 2013). Organizer and presider of a symposium: Nanoeducation: Educational challenges with an emergent scientific field. National Association for Research in Science Teaching (NARST) Annual International Conference, Puerto Rico, USA.

**Blonder, R.** (April 2013). Nanotechnology as a vehicle for implementing non-traditional teaching methods in science education. National Association for Research in Science Teaching (NARST) Annual International Conference, Puerto Rico, USA.

**Blonder, R**., Hofstein, A., Mamlok-Naaman, R., & Rap, S. (September 2013). Using the inquiry laboratory in chemistry to teach asking question cognitive skill: A comparison between different sectors. ESERA, Cyprus.

Rap, S., & **Blonder, R.** (2014). Learning Science in Social Networks: Chemical Interactions on Facebook, *The 9th Chais Conference for the Study of Innovation and Learning Technologies* (lecture). Raanana, Israel.

**Blonder, R.,** & Sakhnini, S. (March 2014). Essential concepts of nanotechnology that should be taught in high school science. NanoIsrael 2014 Meeting, Tel-Aviv, Israel.

Sakhnini, S., & **Blonder, R.** (April 2014). What basic concepts of nanotechnology should be taught in school science. International Association for Research in Science Teaching (NARST) Annual International Conference, Pittsburgh, USA.

Rap, S., & **Blonder, R.** (April 2014). Learning science in social networks: Chemical interactions on Facebook. International Association for Research in Science Teaching (NARST) Annual International Conference, Pittsburgh, USA.

Benny, N., & **Blonder, R.** (April 2014). Interactions between high school science teachers and gifted students in a regular classroom. International Association for Research in Science Teaching (NARST) Annual International Conference, Pittsburgh, USA.

**Blonder, R.,** & Sakhnini, S. (April 2014). Basic concepts and applications for a nanotechnology curriculum based on a three-stage Delphi study of three communities of experts – teachers, researchers and industrial chemists. In: Symposium – Reconceptualizing high school chemistry based on authentic practices. International Association for Research in Science Teaching (NARST) Annual International Conference, Pittsburgh, USA.

**Blonder, R**., & Rap, S. (July, 2014). Learning chemistry on social networks. ECRICE, Jyväskylä, Finland.

**Blonder, R.** & Cohen, S. (July, 2014). Improved accessibility for nanoscience instruction: A general program and its implementation. International Conference on Nanoscience + Technology (ICN+T), Vail, CO, USA.

Benny, N., & **Blonder, R.** (October, 2014). What happens when a gifted student comment: "Excuse me teacher, but you made a mistake…"?. ANEIS International Congress: Giftedness, Academic Acceleration as an Educational Response, Braga, Portugal.

**Blonder, R.,** & Sakhnini, S. (April 2015). Teaching Basic Nanotechnology Concepts in the Context of Nanotechnology Applications: Results of a Delphi Study. International Association for Research in Science Teaching (NARST) Annual International Conference, Chicago, USA.

**Blonder, R.,** & Rap, S. (April 2015). Science teachers using social networks: Self-efficacy and TPACK. International Association for Research in Science Teaching (NARST) Annual International Conference, Chicago, USA.

**Blonder, R**., Zemler, E., & Rosenfeld, S. (September 2015). The rationale of responsible research and innovation (RRI). *ESERA*, Helsinki, Finland.

Rosenfeld, S., Rap, S., Sakhnini, S., Zemler, E., Barad, R., Shaham, A., Khatib, F., Bar-Dov, Z., & **Blonder, R.** (September 2015). Developing a RRI Module on the use of photovoltaic windows in schools: Design-based research. *ESERA*, Helsinki**,** Finland**.**

**Blonder, R.** & Sakhnini, S. (September 2015). Using Nanotechnology Applications as a Context for Teaching Essential Nanoscale Science and Technology Concepts. *ESERA*, Helsinki**,** Finland**.**

Rap, S., & **Blonder, R.** (September 2015). Science teachers using social networks: Self-efficacy and TPACK. *ESERA*, Helsinki**,** Finland**.**

**Blonder, R.,** & Sakhnini, S. (April 2016). Towards integrating nanoscale science and technology concepts and applications into middle- and high-school science curricula. *The 2016 NARST annual meeting*, Baltimore, USA.

Rap, S. & **Blonder, R.** (April 2016). Like us on Facebook : Students' attitudes toward learning chemistry on Facebook groups. *The 2016 NARST annual meeting*, Baltimore, USA.

**Blonder, R.** (June 2017). The challenges of developing an interactive online course for in-service chemistry teachers. *The 7th EuroVariety – European Variety in University Chemistry Education.* Belgrade, Serbia.

Rosenfeld, S., Rap, S., Zemler, E., & **Blonder, R.** (August 2017). Students' attitudes towards RRI As a result of a lesson developed in the Irresistible project. *ESERA*, Dublin, Ireland.

Rap, S., & **Blonder, R.** (August 2017). Informal outreach program for motivating formal chemistry learning. *ESERA*, Dublin, Ireland.

**Blonder, R.,** Rap, S., & Rosenfeld, S. (August 2017). The introduction and the evaluation of RRI. *ESERA*, Dublin, Ireland.

Rap, S., & **Blonder, R.** (September 2018).Bridging the Gap between Science Education Theory and Practice: Teachers' Knowledge of Science Education Research. *The 16th ECRICE conference*, Warsaw, Poland.

Yayon, M., Katchevich, D., **Blonder, R.** & Peleg, R. (September 2018). Chemical escape room workshop: Fun and flow in high-school chemistry. *The 16th ECRICE conference*, Warsaw, Poland. (An active escape room workshop).

**Blonder, R**. & Tuvi-Arad, I. (August 2019). Teaching Chemistry with online Databases. In the symposium: A mature examination of juvenile technologies in science education. *ESERA*, Bologna, Italy.

Yonai, E., & **Blonder, R.** (August 2019). Principle-based design: a course for teachers on working with a scanning electron microscope. *ESERA*, Bologna, Italy.

Easa, E., & **Blonder, R.** (August 2019). Pedagogy of differentiated instruction in the chemistry classroom. *ESERA*, Bologna, Italy.

Rap, S., Yayon, M., & **Blonder, R.** (August 2019). "Escape this!" - Evaluating new chemical escape room activity for high school students. *ESERA*, Bologna, Italy.

Feldman-Maggor, Y., Tuvi-Arad, I., & **Blonder, R**. (August 2019). Online nanotechnology courses for teachers: learning evaluation and learning patterns. *ESERA*, Bologna, Italy.

Dorfman, B.-S., Terrill, B., Patterson, K., Yarden, A., & **Blonder, R.** (August 2019). Promoting teachers' TPACK and TPACK-confidence through a video editing workshop in biochemistry. *ESERA*, Bologna, Italy.

Feldman-Maggor, Y., Tuvi-Arad, I., & **Blonder, R.** (April 2021). Design principles and evaluation of an online nanotechnology professional development course for teachers. *National Association for Research in Science Teaching (NARST) Conference.* (Online conference).

Rap, S., Sindiani, A., Bodas, M., Rosenfeld, S., Friedlander, A., & **Blonder, R.** (April 2021). "Speak to Me in Numbers" – Interdisciplinary Teaching of Sustainable Development Goals. *National Association for Research in Science Teaching (NARST) Conference.* (Online conference).

Yonai, E., & **Blonder, R.** April 2021). An authentic experience with a SEM as a "resonator" for emotion development towards science. *National Association for Research in Science Teaching (NARST) Conference.* (Online conference).

Aviran, E., & **Blonder, R.** April 2021). Different teaching experience: How teachers personalized a teaching unit in an online chemistry learning environment. *National Association for Research in Science Teaching (NARST) Conference.* (Online conference).

Feldman-Maggor, Y., Tuvi-Arad, I. **Blonder, R.** (July 2021). Identifying significant indicators that predict success in online general chemistry courses. *EUROVARIETY2021 conference.* (Online conference).

Rap, S., & **Blonder, R.** (July 2021). Sustainable Development Goals: Teachers' transition from learners to developers. *EUROVARIETY2021 conference.* (Online conference).

**Blonder, R.,** Rap, S., & Fledman-Maggor, Y. (July 2021). Development of TPACK and self-efficacy for online Instruction by advanced degrees lecturers during the COVID-19 breakout. *EUROVARIETY2021 conference.* (Online conference).

**Blonder, R.**, Yayon, M., & Rap, S. (June 2021). Designing a virtual educational escape room for chemistry students. *19th Annual National MEITAL Conference 2021.* (Online conference).

Yayon, M., & Rap, S., & **Blonder, R.** (October 2021). The nanotechnology educational escape room. *NanoIsrael 2021 Meeting*, Jerusalem, Israel.

### *Advising PhD Students*

Naama Benny (completed, 2016): Profiles of high-school chemistry teachers' perceived interactions with gifted students in a regular classroom. doi: 10.34933/wis.000037

Shelley Rap (completed, 2016) *Incumbent of the Orly Kaplan Prize for Outstanding Student*: Chemical interactions on Facebook. doi: 10.34933/wis.000020

Sohair Sakhnini (completed, 2017) *Won a scholarship in memory of Avishay Bar-Ner*: What essential nanoscale science and technology concepts and applications should be taught in high-school science? doi: 10.34933/wis.000229

Ruth Waldman (completed, 2020) *Incumbent of the Orly Kaplan Prize for Outstanding Student*: Professional development of lead chemistry teachers participating in communities of teachers.
Yael Feldman-Maggor: Chemistry learning via on-line courses in different environments. (Co-advisor with Prof. Inbal Tuvi-Arad, Open University of Israel).
Enas Easa: Differentiation instruction in chemistry education.
Ella Yonai: Communication between scientists, teachers and students (and the role of science education) in bridging contemporary science and science students.
Ehud Aviran: Personalization of online teaching and learning system in chemistry (Chem-PeTeL) influences on teachers and student outcomes.

### *Advising MSc Students*

Sohair Sakhnini: What "ideas-about-nanotechnology" should be taught in school science? Building the base for a Delphi study of the expert community *(Direct track, completed, 2012)*.
Ella Yonai: Training physics experts in identifying connections between nanoscale science and technology concepts with the physics middle school curriculum to improve their science communication skills *(Direct track, completed, 2019).*
Ehud Aviran: The implementation of a personalized online learning system in chemistry (Chem-PeTeL), and the influence of the Chem-PeTeL system on student's achievements, misconceptions and attitude in and towards chemistry and towards learning in the on-line environment. *(Direct PhD track, completed with distinction, 2020).*
Aisha Sindyani: Learning about Sustainable Development Goals using mathematics-data-based argumentation.
Tal Hirsh-Sameach: Study of personalization of the Chem-PeTeL environment according students' interest in future jobs.

### *Advising post-docs*

Dr. Shelley Rap: Escape rooms in chemistry education. (2016-2017).
Dr. Inna Shvarts-Serebro: Neuro pedagogy: Integration of insights from neuro science in chemistry teaching. (2019-2021).

## H. Patents:

1. United States Patent 5942388, Electrobiochemical method and system for the determination of an analyte which is a member of recognition pair in a liquid medium, and electrodes thereof.
2. United States Patent 6214205, Determination of an analyte in a liquid medium.
3. United States Patent 6350368, Electrochemical and photochemical electrodes and their use.
4. Scientific advisor of *"ekoloko" an educational Start-up.*(2007-2010): http://myfirsthomepage.co.il/mfhp/games/v_worlds/ekoloko.htm