

Tribute to Dr. Tamar Alice Yinnon (1953 - 2021)

Multiple authors contributed to this special Tribute,
with overall editing by John Stuart Reid

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The passing of Dr. Tamar Alice Yinnon was one of the greatest losses to science of the 21st century, particularly in the field of water science, in which she made great strides, detailed later in this special tribute. Tamar was born in Hilversum, Holland, to Jacob Willem Cohen, a professor of mathematics, and Dina, who had studied nursing as a young woman. Tamar's siblings from Jacob's marriage to Dina, were an older sister, Channa, and a younger sister, Tirsta. Tamar also had a younger brother, Arjon, from Jacob's second marriage. Tamar's mother, Dina, returned alone from the Holocaust; all her family had perished in Auschwitz. She became deeply depressed while her three daughters were still toddlers, and only partially recovered after two decades. Eventually, Jacob divorced Dina and married Annette Waterman. As a child, Tamar showed an early interest in science subjects, which she pursued diligently in her reading and at school. Tamar was also passionate in her involvement with the Jewish youth movement along with the children of the few Dutch Holocaust survivors. After finishing high school with honors, Tamar relocated to Israel in 1970 when she was barely 17 years old, along with Channa, then 18 years old. Tirsta followed Tamar and Channa to Israel in 1974 and continues to live there with her family, while Channa returned to Holland in 1989, and still lives there today. Tamar earned an MSc in theoretical chemistry under Professor Morris Cohen, at Hebrew University, followed by a PhD in surface science at the Fritz Haber Institute of Theoretical Chemistry, under the supervision of Professor Benny Gerber, who subsequently became a long-time friend and colleague. Tamar first met Amos Yinnon, her husband-to be, at age 15, while living in Holland, and after Amos relocated to Israel in 1971, they quickly became close friends and fell in love. They married in 1975, both aged 21. Amos studied to become a medical doctor and after completing his studies he was drafted for four and a half years into the Israeli army as a physician. Tamar gave birth to a son, Carmi*, in 1978, and a daughter Daf-



na,** in 1980. (*Carmi studied chemistry and computer science before moving into the education sector, is married and has four children. **Dafna studied education and works as a high school teacher, is married and has six children.) When Amos was drafted into the army, in order to survive economically and socially, he, Tamar, and their young children moved to Kibbutz Ein Gedi, half-way along the western coast of the Dead Sea. Three and a half years later they moved north to Kibbutz Kalia, at the northern tip of the Dead Sea, around 25 km from Jerusalem and only 1 km from where the Dead Sea Scrolls were found in 1947. Tamar's career as a scientist can be divided into two parts: During the first 20 years, she collaborated with Professor Benny Gerber at the Theoretical Chemistry Department at Hebrew University in Jerusalem, focused on computer simulations of

surface science. They collaborated with leading laboratories in the USA and Germany and published many papers in the relevant scientific literature. Tamar had a strong spiritual view of reality and her scientific ethos was always guided by the vision of the profound interrelationship of human beings and nature. This led her to look for answers that contained spiritual meaning. Tamar's collaboration with Professor Gerber was cut short when she fell ill with depression. As second-generation world war survivors in the Netherlands, Tamar and Amos' parents survived the war but had been severely traumatized by their experiences; most of their respective families had died in the Nazi concentration camps. As a result of the depression that Tamar suffered, she had to discontinue her scientific studies and dedicate herself to recovering her health. She soon discontinued mainstream medical care because the medications offered caused severe and unpleasant side effects. Instead, Tamar turned to complementary health care, guided imagery and homeopathy, which led to her complete recovery. During the first year of homeopathic treatment, Tamar was not aware of the nature of the medications she was receiving. Her doctor knew that Tamar was a scientist and he imagined that she would be very skeptical of homeopathic medications. However, when Tamar began to feel the benefits of the remedies, she became curious about the formulations. Mainstream medicine had failed to support her return to health, but homeopathic remedies, based on diluted water, had brought about a full recovery. As it turned out, Tamar's illness and recovery via homeopathic remedies would prove to be a great gift, not only for her, but for all humanity; her return to health sparked a deep passion to understand the processes by which serially prepared water-based remedies supported healing. In the beautiful environment of the nearby nature reserve, lush with foliage and birds, Tamar found inspiration and allowed herself to focus deeply on the mysteries of water, a science that she considered revolutionary. From the outset, Tamar made the decision to refrain from referring to homeopathy in the scientific terminology employed in her research papers, recognizing that even the word "homeopathy" often raised strong emotions among clear-headed scientists. Tamar began by reading many scientific papers on the subject and, after finding Professor Giuliano Preparata's book on Quantum Electrodynamics (QED), which was published in 1995, she became convinced that a solution was waiting to be discovered in the mechanisms by which highly diluted solutions positively stimulate the body's healing mechanisms, even after dilution below Avogadro's number. Tamar was very much aware

that most scientists working in this field were elderly, having already made their names in other fields, such as Professor Luc Montagnier. Scientists daring to enter this field at a younger age faced criticism, and, in some cases, ostracization, withdrawal of research funds, or outright dismissal. Tamar was puzzled why some scientists could become emotionally charged by the mysteries associated with homeopathy, rather than allow the experimental evidence to speak for itself. The situation reminded her of the famous statement generally attributed to Galileo that, "*nonetheless, that moon turns around that planet.*" In the years that followed, Tamar collaborated with many scientists and published many valuable papers, including some in the Water Journal, and others via the Research-Gate.net site.

Tamar's papers received significant attention, and collaborations developed with several prominent scientists with similar interests, including Professor Zhong-Qiang Liu, Professor Alexander Konovalov, Professor Emilio del Giudice and Professor Vittorio Elia. Tamar greatly appreciated the outstanding contributions of Vittorio Elia and his team in understanding highly diluted solutions and together they wrote a series of important papers.

The following tribute to Tamar was provided by Professor Elia:

"Tamar A. Yinnon was a brilliant research scientist and scholar with whom we had the honor of working and collaborating on diverse projects in recent years. Though taken from all of us too soon, her research contributions will live on in ways not yet imagined or understood because she dared to think outside the limits of the known. She once said that '*Accepting QED (quantum electrodynamics) of water is a major step for humanity. It has tremendous scientific and spiritual implications.*' Tamar's thinking arose from the point of view that coherence in condensed matter shows that the ultimate foundation of reality is in its cooperation, not its individualism.

"In fact, QED provides a reliable description of the ordered, long-living hexagonal structure of liquid water close to the Nafion™ surfaces and can shed light on the aggregation mechanisms in very diluted solutions such as those theoretically studied by Tamar and her scientific colleagues.

"A significant amount of experimental data on physico-chemical properties of water subjected to various kinds of physical (not chemical) disturbance has been collected

over the past two decades by our research group and was deeply analyzed by Tamar, from both the theoretical and experimental points of view. From 2013, Tamar was involved in almost all the experimental works of our research group (some of the most recent papers emerging from this collaboration are still in the process of being published), demonstrating that pure liquid water shows a similar behavior after it has been subjected to different types of perturbations at low energy, *e.g.*, contact with a strongly hydrophilic surface such as Nafion™, Iteratively Nafionated Water (INW); iterative filtration through a sintered glass filter, Iteratively Filtered Water (IFW); and homeopathic treatments, extremely Diluted Solutions (EDS).

“Tamar provided many important contributions, including a quantum-physical description of succession and filtration-induced dynamics and to run an analytical description of the experimental unexplained parameters. She pointed out that successive dilutions of very dilute aqueous solutions, such as iterative filtrations, significantly alter the structural ordering, dynamics, and energy of part of their H₂O molecules, *i.e.*, those molecules coherently oscillating in phase with a coherently condensed EM field. These perturbations excite the liquids, leading to various types of self-organization processes, *e.g.*, ferroelectric ordering of H₂O, formation of cold vortices and auto-ordering of the vortices.

“Tamar was fascinated by the biological implications identified through collaboration with our research group. The dynamic processes by which these dissipative structures are stabilized, and the ability of these structures to recreate the previous physicochemical properties when they are again placed in pure water, suggestively recalls the capacity of some simple living systems such as bacteria or protists, to remain in a quiescent state when the environmental conditions are no longer favorable to life.

“Tamar was also involved in collaboration with our research group into the chirality of the water supramolecular aggregates that play important roles in many technological processes and artificial and biological systems. For instance, these underlie processes in chiral genesis, molecular and chiral recognition, chiral separation and stereochemical assignment, asymmetric synthesis and catalysis, non-linear optic devices, biomimetic systems, and biological self-assembly resulting in DNA or membrane formation.

“The contributions that Tamar made to the field were rooted in her deep knowledge of theoretical physics and

in her curiosity about the hidden meaning of life. The suggestion coming from the observation of the behavior of the spontaneous dissipative systems in pure liquid water, able to ‘condense’ in certain conditions and becoming solid at ambient temperature and pressure, is the basis of the understanding of the matrix of life.

Last, I wish to mention that in my many conversations with Tamar, the human dimension was always paramount and every discovery was interpreted for the purpose of and from the perspective of growth. Tamar was a unique and rare scientist and today we need the qualities she brought to science more than ever. My colleagues and I will miss her greatly.”

Tamar also greatly admired the work of Dr. Gerald Pollack and held the Water Journal in high regard for setting and upholding impeccable standards in reviewing and publishing scientific papers. Therefore, we are greatly honored to provide for our readers the six-part video series that concisely summarized Tamar’s work in modeling and understanding the processes at work during serial dilution of water, and in understanding the Quantum Electrodynamics of water. Tamar was justly proud of this series and we feel that she would have been proud that a video introduction and tribute by Professor Pollack has been added to the beginning of part one of her video series.

In closing this special tribute, Tamar and Amos were married for 46 years and they lived a rich, full, and joyful life in their beautiful kibbutz home. Tamar died peacefully at home in the presence of her beloved Amos and is greatly missed by her family and all who knew her.



Click the photo to watch Part 1 of Dr. Yinnon’s QED presentation, with introduction by Dr. Pollack.

See Part 2 [here](#).

See Part 3 [here](#).

See Part 4 [here](#).

Tamar Yinnon's List of Publications

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Water Research, 2009-2021

Yinnon CA, Yinnon T. Domains in aqueous solutions: Theory and experimental evidence. *Modern Physics Letters B* June 2009; 23(16):1.

Yinnon T. Electric dipole aggregates in very dilute polar liquids: theory and experimental evidence. *International Journal of Modern Physics B* 2011; November: 25:3707.

Yinnon T. Domains of solvated ions in aqueous solutions, their characteristics and impact on electric conductivity: Theory and experimental evidence. *Modern Physics Letters B* 2012 April; 26:1150006.

Yinnon T. Impact of successive dilutions. Thesis. Full-text available. Jan 2013
Yinnon T. Impact of successive dilutions – VIDEO – Part I. October 2013. This video is the first of a series of 5 providing popular science explanations, in the context of classical-limit physics, for impact of successive dilutions on solutions. SEARCHABLE version of this video is available on: <http://www.screencast.com/users/TamarYinnon>

Yinnon T. Impact of successive dilutions – VIDEO – Part II. October 2013. This video is the second of a series of 5 providing popular science explanations, in the context of classical-limit physics, for impact of successive dilutions on solutions. SEARCHABLE version of this video is available on: <http://www.screencast.com/users/TamarYinnon>

Yinnon T. Impact of successive dilutions – VIDEO – Part III. October 2013. This video is the third of a series of 5 providing popular science explanations, in the context of classical-limit physics, for impact of successive dilutions

on solutions. SEARCHABLE version of this video is available on: <http://www.screencast.com/users/TamarYinnon>

Yinnon T. Impact of successive dilutions – VIDEO – Part IV. October 2013. This video is the fourth of a series of 5 providing popular science explanations, in the context of classical-limit physics, for impact of successive dilutions on solutions. SEARCHABLE version of this video is available on: <http://www.screencast.com/users/TamarYinnon>

Yinnon T. Impact of successive dilutions – VIDEO – Part V-VI. October 2013. This video is the fifth of a series of 5 providing popular science explanations, in the context of classical-limit physics, for impact of successive dilutions on solutions. SEARCHABLE version of this video is available on: <http://www.screencast.com/users/TamarYinnon>

Yinnon TA, Elia V. Dynamics in perturbed very dilute aqueous solutions: Theory and experimental evidence. *International Journal of Modern Physics* 2013; February B 27(05):1350005.

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Yinnon T, Liu Domains Formation Mediated by Electromagnetic Fields in Very Dilute Aqueous Solutions: 1. Quantum Electrodynamical Aspects. *Water*; August 2015: 7:33.

Yinnon T, Liu Domains Formation Mediated by Electromagnetic Fields in Very Dilute Aqueous Solutions: 2. Quantum Electrodynamical Analyses of Experimental Data on Strong Electrolyte Solutions. *Water*; September 2015: 7:48.

Yinnon T, Liu Domains Formation Mediated by Electromagnetic Fields in Very Dilute Aqueous Solutions: 3. Quantum Electrodynamical Analyses of Experimental Data on Solutions of Weak Electrolytes and Non-electrolytes *Water* November 2015; 7:70.

Yinnon T, Elia V, Napoli E, Germano R, Liu Z-Q. Water ordering induced by interfaces: an experimental and theoretical study. *Water* July 2016; 7:96

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Elia V, Yinnon T, Oliva R, Napoli E, Germano R, Bobba F. Water ordering induced by a Nafion membrane. Poster. November 2016. DOI:[13140/RG.2.2.19598.15684](https://doi.org/10.13140/RG.2.2.19598.15684)

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Yinnon T. Aqueous Solutions and other Polar Liquids Perturbed by Serial Dilutions and Vigorous Shaking: Analyses of Their UV Spectra. October 2018. DOI:[14294/2018.5](https://doi.org/10.14294/2018.5)

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Elia V, Napoli E, Germano R, Roviella V, Oliva R, Niccoli M, Amoresano A, Toscanesi M, Trifuoggi M, Fabozzi A, Yinnon T. Water perturbed by cellophane: comparison of its physicochemical properties with those of water perturbed with cotton wool or Nafion. *Journal of Thermal Analysis and Calorimetry* 2020 September; 146(5):1-16. DOI:[1007/s10973-020-10185-0](https://doi.org/10.1007/s10973-020-10185-0)

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Hebrew University/Fritz Haber Research (1977-1988)

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