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## Yael Levi-Kalisman

### CV

#### **Education**

**1991-1994:** B.Sc. in Chemistry, The Hebrew University, Jerusalem, Israel.

**1994-1996:** M.Sc. Dept. of Structural Biology, Weizmann Institute of Science. Rehovot, Israel. Supervisors: Prof. Lia Addadi and Prof. Steve Weiner.

Thesis: Control of Aragonite and Calcite Polymorphism in Mollusk Shells: the Functions of the  $\beta$ -Chitin, Silk and Acidic Macromolecules.

**1996-2001:** Ph.D. Dept. of Structural Biology, Weizmann Institute of Science. Rehovot, Israel. Supervisors: Prof. Lia Addadi and Prof. Steve Weiner.

Thesis: Biological Control of Calcium Carbonate Mineralization: Structural Approach.

#### **Appointments:**

**2002- 2008:** Researcher. Head of the Electron Microscopy Unit. The *Ilse Katz* Center for Nanoscale Science and Technology. Ben-Gurion University.

**2008-2009:** Visiting Scientist. Dept. of Structural Biology, Stanford University School of Medicine. Roger Kornberg lab.

**2009-2011:** Staff Scientist. Dept. of Structural Biology, Stanford University School of Medicine. Roger Kornberg lab. Research: Synthesis and characterization of Monolayer-protected gold clusters.

**2011-2014:** Senior Fellow. Head of the Electron Microscopy Unit. The *Ilse Katz* Institute for Nanoscale Science and Technology. Ben-Gurion University.

**2014-Present:** Senior Research Associate. The Center for Nanoscience and Nanotechnology and the Institute of Life Sciences, The Hebrew University of Jerusalem.

#### **List of publications**

1. **Levi, Y., Albeck, S., Brack, A., Weiner, S., Addadi, L. (1998)** Control Over Aragonite Crystal Nucleation and Growth: An In Vitro Study of Biomineralization. *Chem. Eur. J.* 4, no.3, 389-396.

2. **Levi-Kalisman, Y.**, Raz, S., Weiner, S., Addadi, L. and Sagi, I. (2000) X-Ray absorption spectroscopy studies on the structure of a biogenic "amorphous" calcium carbonate phase. *J. Chem. Soc., Dalton Trans.*, 3977-3982.
3. **Levi-Kalisman, Y.**, Falini, G., Addadi, L., Weiner, S. (2001) Structure of the Nacreous Organic Matrix of a Bivalve Mollusk Shell Examined in the Hydrated State Using Cryo-TEM. *J. Struct. Biol.* 135, 8-17.
4. Weiner, S., Gotliv, B., **Levi-Kalisman, Y.**, Raz, S., Weiss, I. M. and Addadi, L. (2001). Mollusk Shell Nacre: an overview of the structure and functions of the organic matrix in shell formation. *In proceedings of BIOM2001*, Kurokawa (Niigata), Japan
5. Weiner, S., **Levi-Kalisman, Y.**, Raz, S., Weiss, I. M. and Addadi, L. (2002). A basic strategy for biomineralization: Taking advantage of disorder. *Microsc. Microanal.* 8, 164-165.
6. **Levi-Kalisman, Y.**, Raz, S., Weiner, S., Addadi, L. and Sagi, I. (2002). Structural Differences Between biogenic Amorphous Calcium Carbonate Phases using X-Ray Absorption spectroscopy. *Adv. Func. Mater.* 12, No. 1, 43-48.
7. Nativ-Roth, E., **Levi-Kalisman, Y.**, Regev, O. and Yerushalmi-Rozen, R. (2002). On the route to compatibilization of carbon nanotubes. *J. Polym. Eng.* 22(5), 353-368.
8. Weiner, S., **Levi-Kalisman, Y.**, Raz, S. and Addadi, L. (2003). Biologically formed amorphous calcium carbonate. *Connect. Tissue Res.* 44, 214-218.
9. Shvartzman-Cohen, R., **Levi-Kalisman, Y.**, Nativ-Roth, E. and Yerushalmi-Rozen, R. (2004). Generic approach for Dispersing Single-Walled Carbon Nanotubes: The Strength of a Weak Interaction. *Langmuir*, 20(15), 6085-6088.
10. Shvartzman-Cohen, R., Nativ-Roth, E., Baskaran, E., **Levi-Kalisman, Y.**, Szleifer, I. and Yerushalmi-Rozen, R. (2004). Selective Dispersion of Single-Walled Carbon Nanotubes in the Presence of Polymers: the Role of Molecular and Colloidal Length Scales. *JACS*, 126(45), 14850-14857.
11. Thiruvengadathan, R., **Levi-Kalisman, Y.** and Regev, O. (2005). Templating nanostructures by mesoporous materials with an emphasis on room temperature and cryogenic TEM studies. *Current Opinion in Colloid & Interface Science*, 10, 280-286.
12. Gross, T., Zmora E., **Levi-Kalisman, Y.**, Regev, O. and Berman, A. (2006) Lung-surfactant - meconium interaction: *in-vitro* study in bulk and at the air-solution interface. *Langmuir*, 22, 3243-3250.

13. Thiruvengadathan, R., **Levi-Kalisman, Y.** and Regev, O. (2007). Synergetic Effect of Ultrasound and Sodium Dodecyl Sulphate in the Formation of CdS Nanostructures in Aqueous Solution. *Ultrasonics Sonochemistry*, 14, 398-404.
14. Politi, Y., **Levi-Kalisman, Y.**, Raz, S., Wilt F., Addadi L., Weiner S. and Sagi I. (2006). Structural Characterization of the Transient Amorphous Calcium Carbonate Precursor phase in Sea Urchin Embryos. *Adv. Func. Mater.* 16(10), 1289-1298.
15. Krichevski, O., **Levi-Kalisman, Y.**, Szwarcman, D., Lereah, Y., and Markovich, G. (2007) Growth of Au/Ag nanowires in thin surfactant solution films: an electron microscopy study. *J. Colloid Interface Sci.* 314, 304-309
16. Segman-Magidovich, S. Grisar, H., Gitli, T., **Levi-Kalisman, Y.** and H. Rapaport. (2008) Matrices of acidic beta-sheet peptides as templates for calcium phosphate mineralization. *Adv. Mater.* 20, 2156-2161.
17. Spornath, L., Regev, O., **Levi-Kalisman, Y.**, Magdassi, S. (2009). Phase transitions in O/W lauryl acrylate emulsions during phase inversion, studied by light microscopy and cryo-TEM. *Colloids and Surfaces A: Physicochem. Eng. Aspects*. 33, 19-25.
18. **Levi-Kalisman, Y.**, Jadzinsky, P. D., Kalisman, N., Tsunoyama, H., Tsukuda, T., Bushnell, D. A. and Kornberg, R. D. (2011). Synthesis and Characterization of Au<sub>102</sub>(p-MBA)<sub>44</sub> Nanoparticles. *JACS*, 133(9), 2976–2982.
19. Hulkko, E. , Lopez-Acevedo, O. , Koivisto, J. , **Levi-Kalisman, Y.** , Kornberg, R. D. , Pettersson, M. and Häkkinen, H. (2011). Electronic and Vibrational Signatures of the Au<sub>102</sub>(p-MBA)<sub>44</sub> cluster. *JACS*, 133(11), 3752-3755.
20. Vinod, T. P., Zarhitski, S., Morag, A., Zeiri, L., **Levi-Kalisman, Y.**, Rapaport, H. and Jelinek, R. (2013). Transparent, conductive and SERS-active Au nanofiber films assembled on an amphiphilic peptide template. *Nanoscale*, 5, 10487-10493.
21. Murakami, K\* ., Elmlund, H\* ., Kalisman, N\* ., Bushnell, A. D., Adams, C. M., Azubel, M., Elmlund, D., **Levi-Kalisman, Y.**, Liu, X., Levitt, M., Kornberg, D. R. (2013). Architecture of an RNA Polymerase II Transcription Pre-Initiation Complex. *Science*, 342, 709-716.
22. Itzhak-Cohen, R., Nativ-Roth, E., **Levi-Kalisman, Y.**, Josef, E., Szleifer, I. and Yerushalmi-Rozen, R. (2014). Nematic Ordering of SWNT in Meso-Structured Thin Liquid Films of Polystyrenesulfonate. *Langmuir*, 30, 14963-14970.
23. Malishev, R., Nandi, S., Kolusheva, S., **Levi-Kalisman, Y.**, Frank-Gerrit Klarner, F.G., Schrader, T., Bitan, G. and Jelinek, R. (2015). Toxicity

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25. Cohen, N., Binyamin, L., **Levi-Kalisman, Y.**, Berguig, G.Y., Convertine, A., Stayton, P. and Yerushalmi– Rozen, R. (2016). pH and salt effects on surface activity and self-assembly of copolymers containing a weak polybase. *Langmuir*, 32(36), 9286-9292.
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27. Eisenberg, I., Harris, D., **Levi-Kalisman, Y.**, Yochelis, S., Shemesh, A., Ben-Nissan, G., Sharon, M., Raviv, U., Adir, N., Keren, N. and Paltiel, Y., (2017). Concentration-based self-assembly of phycoyanin. *Photosynth Res*, 1-11.
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29. Ginsburg, A., Shemesh, A., Millgram, A., Dharan, R., **Levi-Kalisman, Y.**, Ringel, I. and Raviv, U., (2017). Structure of Dynamic, Taxol-Stabilized, and GMPPCP-Stabilized Microtubule. *J. Phys. Chem. B.* 121(36), 8427-8436.
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35. Shemesh, A., Ginsburg, A., **Levi-Kalisman, Y.**, Ringel, I. and Raviv, U. (2018). Structure, Assembly and Disassembly of Tubulin Single rings. *Biochemistry*, 57 (43), 6153-6165.
36. Rutenberg, R., Galaktionova, D., Golden, G., Cohen, Y., **Levi-Kalisman, Y.**, Cohen, G., Kral, P. & Poverenov, E. (2018). Omniphilic Polysaccharide-Based Nanocarriers for a Modular Molecular Delivery in a Broad Range of Bio-Systems. *ACS appl. Mater. Interfaces*, 10 (43), 36711-36720.
37. Ning, J., Liu, J., **Levi-Kalisman, Y.**, Frenkel, A. I., & Banin, U. (2018). Controlling Anisotropic Growth of Colloidal ZnSe Nanostructures. *JACS*, 140 (44), 14627-14637.
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39. Aizik, G., Waiskopf, N., Agbaria, M., Ben-David-Naim, M., **Levi-Kalisman, Y.**, Shahar, A., Banin, U. and Golomb, G. (2019). Liposomes of Quantum Dots Configured for Passive and Active Delivery to Tumor Tissue. *Nano lett.* 19, 5844-5852.
40. Kopatz, I., Zalk, R., **Levi-Kalisman, Y.**, Zlotkin-Rivkin, E., Frank, G.A. and Kler, S. (2019). Packaging of DNA origami in viral capsids. *Nanoscale*, 11, 10160-10166.
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45. Arnon-Rips, H., Sabag, A., Tepper-Bamnolker, P., Chalupovich, D., **Levi-Kalisman, Y.**, Eshel, D., Porat, R. and Poverenov, E. (2020). Effective suppression of potato tuber sprouting using polysaccharide-based emulsified films for prolonged release of citral. *Food Hydrocolloids*, p.105644.
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48. Attia, D., Cohen, N., Ochbaum, G. **Levi-Kalisman, Y.**, Bitton, R. and Yerushalmi-Rozen, R. (2020). Nano-to-meso structure of cellulose nanocrystals phases in ethylene-glycol-water mixtures. *Soft Matter*.
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50. Wang, C., Guan, W., Chen, R., **Levi-Kalisman, Y.**, Xu, Y., Zhang, L., Zhou, M., Xu, G. and Dou, H. (2020). Fluorescent glycan nanoparticle-based FACS assays for the identification of genuine drug-resistant cancer cells with differentiation potential. *Nano Research*, 1-13.