

Curriculum Vitae

Full name: **YOAV DAVID LIVNEY**

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Date and place of birth: 18.04.64 Haifa, Israel.

Marital status: Married, 3 children

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ACADEMIC DEGREES

1990 B.Sc. (Suma Cum Laude) - Food Engineering and Biotechnology, Technion-
Israel Institute of Technology, Israel

1995 M.S. - Food Science, University of Wisconsin, Madison, WI, USA

2002 Ph.D. - Food Engineering and Biotechnology, Technion- Israel Institute of
Technology, Haifa, Israel

ACADEMIC APPOINTMENTS

1998-2002 Adjunct Teacher, Dept. of Food Engineering and
Biotechnology, Technion- Israel Institute of Technology,
Haifa, Israel

2002-2004 Post-Doctoral Research Associate, with Prof. Douglas G.
Dalgleish, Dept. of Food Science, University of Guelph,
Guelph, Ontario, Canada

2004-2007 Lecturer, at the Dept. of Biotechnology and Food
Engineering, The Technion, Israel institute of Technology.

2007-2012 Senior Lecturer (Assistant Professor), at the Dept. of Biotechnology and
Food Engineering, The Technion, Israel institute of Technology.

2012- Associate Professor at the Dept. of Biotechnology and
Food Engineering, The Technion, Israel institute of Technology.

PROFESSIONAL EXPERIENCE

1990-1991 Quality Control Manager, Strauss Dairies Ltd.

1991-1992 Quarg Dept. Technologist, and Manager of Quarg Production Dept.,
Strauss Dairies Ltd.

1995-1998 Strauss Dairies Ltd. Cheese Product Development Manager.

RESEARCH INTERESTS

- Physical chemistry of biomacromolecules in food and biotechnology
 - Water-structure effects of low molecular weight solutes, and its impact on macromolecules.
 - Biopolymers, gels, and their interactions with low molecular weight components.
 - Physical chemistry, structure and interactions of milk proteins
- Nanotechnology: Nature-inspired nano-delivery systems for nutraceuticals and drugs, based mainly on proteins and polysaccharides.

TEACHING EXPERIENCE

- 2005-present Thermodynamics in Biotechnology & Food Engineering
(undergraduate, 4 credit points)
- 2005-present Structure and Properties of Biological and Food Materials
(undergraduate, 3.5 credit points)
- 2006 Physical Chemistry of Foods (Graduate, 2 credit points,
ME Program)
- 2006-present Selected topics in Food Technology A: Course Coordinator
- 2007-present Selected topics in Food Technology B: Course Coordinator

Teaching assistant:

- 1998-2002 Thermodynamics in Food Engineering (undergraduate)
- 1999-2000 Packaging of Foods and Medicines (undergraduate)
- 2001 Separation and Recovery Processes in Biotechnology
(undergraduate + graduate).

TECHNION ACTIVITIES & RESPONSIBILITIES

- 2004-2007 Quality Assurance and Dependability – Graduate program committee member.
- 2005 Faculty representative in the committee for evaluation of the basic Math courses at the Technion.
- 2006 Departmental Coordinator of the Technion's "Researcher's Night" event funded by the European Union, at the National Museum of Science & Technology.
- 2010- Faculty representative at the Technion International School Founding committee
- July 2012- Graduate Studies Coordinator, Nanoscience & Nanotechnology Interdepartmental Program.

PUBLIC PROFESSIONAL ACTIVITIES

- 2005 - Present Member of the review committee in "The Milk Consulate" ("Moetset Hechalav").
- 2006 – 2010 Member of the Management Committee of European Concerted Research Action designated as COST #865: "Bioencapsulation multiscale interaction analysis".
- 2010 – Member of the BARD review committee
- 2012 – Member of a "Malag" (Israeli Council for High Education) committee for evaluation of B.Sc. study programs in Nutrition.
- 2013-4 Guest Editor "Food Biophysics" (Springer)

MEMBERSHIP IN PROFESSIONAL SOCIETIES

IFT-Institute of Food Technologists: elected as Professional Member (00094244) and a Certified Food Scientist (CFS) among the inaugural class of recipients (2013).

ISFE-International Society of Food Engineering (Member No. 001124) &

IUFOST-International Union of Food Science & Technology

ACS- American Chemical Society

ICS- Israel Chemical Society

AOAC-International- American Organization of Analytical Chemists- International

The Israeli Institute of Chemical Engineers (IChE)

ISPP-The Israeli Society for polymers and Plastics

BRG-Bioencapsulation Research Group.

The Israeli Controlled Release Society

The Innovation Forum

The Russell Berrie Nanotechnology Institute at the Technion

HONORS AND AWARDS

1988-1990	President's list of honors for scholastic achievements
1990	Certificate of Excellence in Academic Studies granted by the Education and Culture Committee of Israel's Parliament, the Knesset
1999, 2000	Teaching Excellence Awards for teaching assistants.
2001	Special Excellence Grant from the Miriam & Aaron Gutwirth Memorial foundation.
2001	Excellence Award in Memory of Prof. Arieh Litan.
2001	Certificate of Excellence in Academic Studies granted by the Education and Culture Committee of the Knesset.
2001	Summer scholarship for excellent students from the Technion Graduate School
2002	Special Excellence Grant from the Miriam & Aaron Gutwirth Memorial foundation.
2003	Elected as a Professional Member of the Institute of Food Technologists, The Society for Food Science and Technology.
2005	The Leah and Donald Lewis Academic Lectureship.
2006	The Leah and Donald Lewis Academic Lectureship.
2009	The Alexander Goldberg Research Prize
2013	Certified Food Scientist (CFS) among the inaugural class of recipients.

GRADUATE STUDENTS

Completed Theses:

M.Sc.

1. Efrat Semo, 2007, Casein Micelle as a Natural Nano-Capsular Vehicle for Nutraceuticals, supervisor: Yoav D. Livney. (Currently at Tapugan Industries Ltd., Sderot, Quality assurance Manager)
2. Nadav Ron, 2007, Beta Lactoglobulin as a Nano-Capsular Vehicle for Health-Promoting Hydrophobic Nutraceutical Substances. Supervisor: Dr. Yoav D. Livney. (Currently at Strauss, as bakery and cereal product development technologist)
3. Avi Shpigelman, 2007, Mechanisms of Saccharide Modulation of Protein Behavior in Aqueous Media. Supervisor: Dr. Yoav D. Livney. (Currently doing Post Doc in Belgium)
4. Inna Shechter, 2007, Molecular aspects of co-solvent effects on volume phase transition in poly (N-isopropylacrylamide) solutions, Supervisor: Associate Prof. Yaron Paz, Co-supervisor: Dr. Yoav D. Livney. (Currently, a process engineer in Tower)
5. Roe Pinhassi, 2008, Nano Particles for Targeted Delivery and Target-Activated Release of Anti-Cancer Drugs. Supervisor: Dr. Yoav D. Livney, Co-supervisor: Prof. Yehuda G. Assaraf. (worked in Tivol, as a product development manager, and currently doing a PhD in the Technion faculty of Biology, working on "Green Energy")

6. Tamar Shragai (Volach), 2007, Anti-microbial active-packaging for meat products. Supervisor: Prof. Joseph Miltz, Co-Supervisor: Dr. Y. D. Livney.
7. Patricia Zimet, 2009, Milk Protein Based Nano-Vehicles for Omega 3-Polyunsaturated Fatty Acids. Supervisor: Dr. Yoav D. Livney.
8. Renata Kisiliak, 2010, The Mechanisms of Thermal Stabilization of Proteins by Sugars in Aqueous Solutions. Supervisor: Dr. Yoav D. Livney. (Currently studying for PhD in Bar Ilan University).
9. Gilad Markman, 2011, Protein-polysaccharide conjugates for delivery of hydrophobic nutraceuticals. Supervisor: Dr. Yoav D. Livney.
10. Michal Haham, 2011, Bioavailability and stability of vitamin D encapsulated within Casein Micelles. Supervisor: Dr. Yoav D. Livney.
11. Yonatan Levinson, 2013, Soybean and Milk Protein Nanoparticles for Protecting and Delivering Vitamin D as a Model Lipophilic Nutraceutical. Supervisor: Prof. Yoav D. Livney. (Currently working in Protalics)

Ph.D.

12. Alina Shapira, 2012, (RBNI Nanoscience & Nanotechnology Program), Targeted nano systems for oral delivery of cancer therapeutics. Supervisor: Dr. Yoav D. Livney, co-Supervisor: Prof. Yehuda G. Assaraf.
13. Avi Shpigelman, 2012, (Interdisciplinary Biotechnology Program) Protein Nano-Vehicles for Delivery of EGCG from Green Tea for Preventive Medicine. Supervisor: Dr. Yoav D. Livney.

Theses in Progress:

Ph.D.

14. Ravit Edelman, expected 2015 (Interdisciplinary Biotechnology Program), Modified Hyaluronic acid nanoparticles as targeted vehicles for cancer therapy. Supervisor: Dr. Yoav D. Livney, co-Supervisor: Prof. Yehuda G. Assaraf.
15. Gal Israeli, expected 2015, Protein interactions with nanocrystals of hydrophobic bioactives: Towards application as delivery systems Supervisor: Dr. Yoav D. Livney.
16. Yifat Haviv, expected 2015, Bioavailability of lipophilic bioactives in protein nanovehicles, compared to that in fat. Supervisor: Dr. Yoav D. Livney.
17. Yedidia Zaguri, expected 2016, Enzymatically-tailored sugar beet pectin nanovehicles of bioactive delivery. (RBNI Nanoscience & Nanotechnology Program). Supervisor: Dr. Yoav D. Livney.
18. Maya Weber, expected 2017, (RBNI Nanoscience & Nanotechnology Program), Beta casein based oral nanovehicles for selectively targeted chemotherapy. Supervisor: Dr. Yoav D. Livney, co-Supervisor: Prof. Yehuda G. Assaraf.

M.Sc.

19. Shlomit Levi, Expected 2015, (RBNI Nanoscience & Nanotechnology Program). Supervisor: Dr. Yoav D. Livney.

RESEARCH GRANTS

- 2005 **German-Israel Foundation**, Young Scientists Program, Casein Micelle as a Natural Nano-Capsular Vehicle for Nutraceuticals, €40,000, Dr. Y. D. Livney - PI
- 2005 – 2008 **Israel Science Foundation**, Mechanisms of Saccharide Modulation of Protein Behavior in Aqueous Media, \$130,300, Dr. Y. D. Livney - PI
- 2005 **Israel Science Foundation**, New Researcher Lab Equipment Grant \$140,000, Dr. Y. D. Livney - PI
- 2006 – 2007 **Danone Institute Grant**, Beta Lactoglobulin as a Nano Capsular Vehicle for Health-Promoting Hydrophobic Nutraceutical Substances, \$12.500, Dr. Y. D. Livney - PI
- 2007 – 2011 **Aba Kahani Memorial Donation**, Targeted nano systems for oral delivery of cancer therapeutics \$75,000, Dr. Y. D. Livney – PI, Prof. Y. G. Assaraf, Co-PI
- 2007 – 2008 **Tnuva Research Institute**, Nano-encapsulation of omega 3 (DHA) within Casein Micelles, 85,000 NIS, Dr. Y. D. Livney - PI
- 2008 – 2010 **Ministry of Health & Dairy Council**, Bioavailability and stability of vitamin D, nanoencapsulated in casein micelles, 200,000 NIS, Dr. Y. D. Livney – PI, Prof. Sophia Ish-Shalom co-PI.
- 2009 – 2010 **Nofar, (in collaboration with Coca Cola)**, Core-Shell Nano-Capsules for Protection of Water-insoluble Nutraceuticals in Clear Drinks, 466,600 NIS Dr. Y. D. Livney – PI
- 2010 – 2011 **Israel Dairy Council and the Ministry of Health**, Bioavailability of vitamin D encapsulated in casein micelles, compared to its bioavailability in the milk-fat, 100,000 NIS, Dr. Y. D. Livney – PI, Prof. Sophia Ish-Shalom co-PI.
- 2011 – 2012 **Nofar, (in collaboration with Solbar Plant Extracts Ltd.)** Soybean proteins, as nanovehicles for health- promoting compounds, 372,800 NIS, Dr. Y. D. Livney – PI.
- 2012 - 2013 **Israel Dairy Council and the Ministry of Agriculture**, Bioavailability of vitamin D encapsulated in casein micelles, compared to its bioavailability in a synthetic surfactant, 80,000 NIS, Dr. Y. D. Livney – PI, Prof. Sophia Ish-Shalom co-PI.
- 2013 - 2015 **Italy-Israel Cooperation Fund**, Hyaluronic-acid based quadrugnostic nanoparticles for overcoming cancer drug resistance and for diagnostics (based on Iron Oxide super-paramagnetic NPs). 200,000 NIS Prof. Y. D. Livney – PI, Prof, Elena Vismara PI, Prof. Y. G. Assaraf, Co-PI.

SIGNIFICANT PROFESSIONAL PROJECTS

- 1990-1991 Technological responsibility for the design and operation of the first production line of “Gamadim”-kids’ quarg cheese product, In Strauss Dairies, Naharia.
- 1995-6 Management, design, and performance of a successful production scale full-factorial-design project for optimizing the quality of Strauss Quarg-cheese (“Ski”) in Strauss Dairies, Naharia. (Consequently, Ski moved up to first place among competitors products, based on independent external evaluations)

- 1995-6 Developing the first low fat (5%) cream cheese product in Israel ("Symphonia"), in Strauss Dairies, Naharia.
- 1996-8 Participating in the design team planning the new Strauss Dairy in Bar-Lev site.

RESEARCH ACHIEVEMENTS

The main research themes of my group are:

1) ***Water-structure effects of cosolutes on biopolymers:*** Seek fundamental understanding of the chemo-physical interactions between biopolymers, low molecular weight cosolutes, and water.

2) ***Nano-delivery systems:*** Apply the above knowledge in the rational design and engineering of nature-inspired targeted nanodelivery systems for health-promoting bioactive molecules, like nutraceuticals and drugs.

Our main research achievements include:

(* Graduate students supervised by Dr. Livney; ^Undergraduate project students supervised by Dr. Livney; # Research associates in Livney's group)

- ***Casein micelles as nano-vehicles:*** We have introduced the potential of casein micelles to serve as nano-vehicles for added hydrophobic (and other) nutraceuticals (e.g. vitamin D) that can be used for enrichment of staple foods (mainly low or non-fat) (9. Semo* et al 2007; Patent 1- granted). Moreover, we found that the micelles can protect the encapsulated bioactive against thermal degradation, against UV light induced photochemical degradation, and during shelf life in cold storage, and that bioavailability of the vitamin in humans (successfully completed clinical trial) is at least as good as in a commercial food supplement based on synthetic surfactants (25. Haham* et al. 2012 Food & Function). We recently showed also that casein micelles with or without the use of calcium and phosphate, may encapsulate and protect DHA (20. Zimet* et al. 2011 Food Hydrocolloids).
- ***Beta lactoglobulin-polysaccharide nanocomplexes as vehicles:*** We have introduced a novel nanodelivery technology for hydrophobic nutraceuticals, based on beta lactoglobulin- a molecular carrier of hydrophobic compounds, and an excess of pectin, which brought about the formation of stable electrostatic nanocomplexes useful for enrichment of clear acid beverages (Ron*, N. M.Sc. thesis 2007; 17. Ron* et al 2010, Patent 2, granted). We were apparently the first to show that beta lactoglobulin can bind DHA, the important omega-3 fatty acid. The β -lg pectin nanocomplexes provided protection against DHA degradation during accelerated shelf life study (11. Zimet* et al 2009,).
- ***Heated beta lactoglobulin as a vehicle for water-soluble bioactives:*** We introduced a novel technology for nanoencapsulation of EGCG- a highly potent polyphenolic nutraceutical with numerous attributed health benefits, which is water soluble (thus difficult to nanoencapsulate) within heat-denatured beta lactoglobulin nanoparticles. The nanoparticles formed provided good protection against EGCG degradation, and kept the system completely transparent. Moreover, the encapsulation significantly suppressed the bitter & astringent tastes of EGCG (15. Shpigelman* et al 2010; Pending patent 5. 2010; 24. Shpigelman* et al. Food Hydrocolloids).
- ***Beta casein nanoparticles for oral delivery of anticancer drugs:*** We have harnessed the self-assembly of beta casein for nanoencapsulation of hydrophobic anticancer drugs, e.g. mitoxantrone, paclitaxel, irinotecan, docetaxel and vinblastine, and demonstrated release of paclitaxel for treatment of gastric carcinoma (one of the leading causes of death among cancer patients), upon

simulated gastric digestion, and no cytotoxicity before digestion. (13, 16, 18 and 22 Shapira* et al, Pending patent 4, 2008).

- **Novel arabinogalactan-based targeted delivery system for chemotherapy:** We have managed to form a novel polymeric delivery system for anti-cancer drugs, based on arabinogalactan (a highly water soluble polysaccharide from the Larix tree). The system has both an active targeting mechanism, based on folic acid, and a target-activated release mechanism- by connecting the drug via an endosomally cleavable peptide linker, which remains intact in the circulation. We have successfully demonstrated the efficacy and selectivity of the system on cell lines (14. Pinhassi* et al 2010).
- **Binding of a chaotropic salt (KSCN) to PNIPA:** To advance the understanding of the mechanism of salting-in salts effects, we have provided previously unreported calorimetric evidence for the binding of a chaotropic salt (KSCN) to poly-n-isopropylacrylamide (PNIPA), a model for proteins, using sensitive isothermal microcalorimetry, and provided a new explanation for the entropic binding mechanism (12. I. Shechter* et al. 2010).
- **Mechanisms of saccharides effect on polymers in aqueous systems:** Studying the mechanisms of protection of saccharides against protein denaturation, and using PNIPA as a model for proteins, we have shown a correlation between the hydration number of different sugar isomers and their effect on the phase transition temperature of PNIPA (10. Shpigelman* et al, 2007; 19. Shpigelman* et al., Colloid and Polymer Science) and on the deswelling of PNIPA gel (21. N. Manukovsky^ et al, 2011).
- **Mechanisms of saccharides effect on water structure, and on protein denaturation:** Using modeling, atomic molecular simulations, and advanced instrumental techniques, we have proposed and provided substantial support to a novel **templating mechanism** of saccharides on cooperative hydrogen bonding of their vicinal water. The better a sugar fits into an ideal water structure, as embodied in hexagonal ice, the better a template it will be, and consequently the higher its hydration number will be, and the stronger its protective effect against thermal denaturation of a globular protein (R. Edelman*, I. Kusner#, R. Kisiliak* S. Srebnik, and Y.D. Livney- in preparation).
- **Novel Maillard-reaction based protein-polysaccharide conjugates, as nanovehicles for hydrophobic nutraceuticals in clear beverages:** We developed novel Maillard conjugates of milk- or vegetable-proteins and oligosaccharides, and demonstrated the binding of hydrophobic nutraceuticals, and the protection conferred by the conjugate-based nanovehicles in clear solutions, applicable for nutraceuticals enrichment of clear beverages. (23. G. Markman* & Y. D. Livney, 2012)
- **Biphasic co-assembly for creating novel functional nanostructures: Formation and entrapment of hydrophobic bioactive nanocrystals within hydrophobin nano-shells.** We have managed to control the size of crystals of hydrophobic nutraceuticals and to nanoencapsulate them using hydrophobins-fungi based proteins, while providing significant protection to the hydrophobic nutraceutical against degradation. This is apparently first work showing the potential of hydrophobins for nanoencapsulation application in food (27. G. Israeli* and Y. D. Livney, 2014).
- **The effect of stereoisomeric monosaccharides on the protein self-assembly.** We studied the effect of glucose, galactose and mannose on the Micellization of β -Casein, as a model self-assembling protein, using pyrene as a fluorescent probe for hydrophobic domain formation and we developed a mathematical model to interpret the results. The following order was found in effectiveness of sugars in

promoting protein self-assembly: glucose>galactose>mannose. This order correlates with the ratio of hydrophobic to hydrophilic surface of the sugars and with their elution times on a polyacrylamide size exclusion column (Ofer Seter[^] & **Y. D. Livney**, In preparation).

- **The protective effect of sugars against EGCG oxidation.** The mechanisms of protective effect of different sugars against EGCG oxidation were studied, suggesting a combined effect comprising ion chelation, decrease of oxygen solubility, and direct binding of sugars to EGCG. (26. A. Shpigelman*, Adi Zisapel[^], Yifat Cohen* and **Y. D. Livney** 2013)
- **Bioavailability of hydrophobic nutraceuticals in protein nanoparticles compared to that in milk-fat:** in a recently completed clinical trial with 90 volunteers, we found as high bioavailability of vitamin D in protein nanoparticles as in milkfat (Y. Cohen*, S. Ish-Shalom & and **Y. D. Livney**, In preparation).

PUBLICATIONS

Theses

1. M.S.: Recovery of Proteins from Thermoquarg Whey by Microfiltration of Carboxymethyl Cellulose Complexes. (1995), Supervisor: Prof. Robert L. Bradley, Food Science, University of Wisconsin, Madison, WI, USA
2. Ph.D.: Mechanisms of Swelling and Contraction of Nonionic Hydrophilic Polymer Gels in Presence of Low Molecular Weight Co-Solutes. (2002), Supervisors: Prof. Uri Cogan & Prof. Shimon Mizrahi, Food Engineering and Biotechnology, Technion-Israel Institute of Technology, Haifa, Israel.

Refereed papers in professional journals

Published papers

(Corresponding author; * Graduate students supervised by Dr. Livney;

[^] Undergraduate students supervised by Dr. Livney, # Research associates in Livney's group)

1. **Y. D. Livney**, D. P. Donhowe, R. W. Hartel, Influence of Temperature on Crystallization of Lactose in Ice cream, *International Journal of Food Science and Technology* 30 (1995) 311-320. (FOOD SCIENCE & TECHNOLOGY 54/128) IF 1.223.
2. **Y. D. Livney**, O. Ramon, E. Kesselman, U. Cogan, S. Mizrahi, and Y. Cohen, Swelling of Dextran Gel and Osmotic Pressure of Soluble Dextran in the Presence of Salts, *Journal of Polymer Science, Part B: Polymer Physics* 39 (2001) 2740-2750. (POLYMER SCIENCE 35/79) IF 1.3.
3. **Y. D. Livney**, I. Portnaya, B. Faupin[^], O. Ramon, Y. Cohen, U. Cogan, S. Mizrahi, Interactions between Inorganic Salts and Polyacrylamide in Aqueous Solutions and Gels. *Journal of Polymer Science: Part B: Polymer Physics* 41 (2003) 508 -519. (POLYMER SCIENCE 35/79) IF 1.3.
4. **Y. D. Livney**, I. Portnaya, B. Faupin[^], L. Fahoum[^], O. Ramon, Y. Cohen, S. Mizrahi, and U. Cogan, Interactions of Glucose and Polyacrylamide in Solutions and Gels, *Journal of Polymer Science: Part B: Polymer Physics* 41 (2003) 3053-3063. (POLYMER SCIENCE 35/79) IF 1.3.

5. **Y. D. Livney**, E. Verespej, and D. G. Dalgleish, Steric Effects Governing Disulfide Bond Interchange during Thermal Aggregation in Solutions of β -Lactoglobulin B and α -lactalbumin. *Journal of Agricultural and Food Chemistry* 51 (2003) 8098-8106. (FOOD SCIENCE & TECHNOLOGY 10/128, CHEMISTRY, APPLIED 8/70, AGRICULTURE, MULTIDISCIPLINARY 2/55) IF 2.816.
6. **Y. D. Livney**, and D. G. Dalgleish, Specificity of Disulfide Bond Formation during Thermal Aggregation in Solutions of β -Lactoglobulin B and κ -Casein A. *Journal of Agricultural and Food Chemistry* 52 (2004) 5527-5532. (FOOD SCIENCE & TECHNOLOGY 10/128, CHEMISTRY, APPLIED 8/70, AGRICULTURE, MULTIDISCIPLINARY 2/55) IF 2.816.
7. **Y. D. Livney**, A. Schwan, and D. G. Dalgleish, A Study of β -Casein Tertiary Structure by Intramolecular Crosslinking and Mass Spectrometry. *Journal of Dairy Science* 87 (2004) 3638-3647. (AGRICULTURE, DAIRY & ANIMAL SCIENCE 3/50, FOOD SCIENCE & TECHNOLOGY 11/118) IF 2.463.
8. I. Portnaya[#], U. Cogan, **Y. D. Livney**, O. Ramon[#], K. Shimoni, M. Rosenberg and D. Danino, Micellization of Bovine beta-casein Studied by Isothermal Titration Microcalorimetry and Cryogenic-Transmission Electron Microscopy, *Journal of Agricultural and Food Chemistry* 54 (2006) 5555-5561. (FOOD SCIENCE & TECHNOLOGY 10/128, CHEMISTRY, APPLIED 8/70, AGRICULTURE, MULTIDISCIPLINARY 2/55) IF 2.816.
9. E. Semo^{*}, E. Kesselman, D. Danino, **Y. D. Livney**, Casein micelle as a natural nano-capsular vehicle for nutraceuticals. *Food Hydrocolloids* 21 (2007) 936-942. (CHEMISTRY, APPLIED 10/70; FOOD SCIENCE & TECHNOLOGY 13/128) IF 2.659.
10. A. Shpigelman^{*}, I. Portnaya[#], O. Ramon[#], and **Y. D. Livney**, Saccharide-Structure Effects on Poly N-Isopropylacrylamide Phase Transition in Aqueous Media: Reflections on Protein Stability; *Journal of Polymer Science: Part B: Polymer Physics* 46 (2007) 2307-2318. (POLYMER SCIENCE 35/79) IF 1.3.
11. P. Zimet^{*} and **Y. D. Livney**, Beta-lactoglobulin and its nanocomplexes with pectin as vehicles for ω -3 polyunsaturated fatty acids, *Food Hydrocolloids* 23 (2009) 1120–1126. (CHEMISTRY, APPLIED 10/70; FOOD SCIENCE & TECHNOLOGY 13/128) IF 2.659.
12. I. Shechter^{*}, O. Ramon[#], Y. Paz and **Y. D. Livney**, Microcalorimetric study of the effects of a chaotropic salt, KSCN, on the Lower Critical Solution Temperature (LCST) of Aqueous Poly(N isopropylacrylamide) (PNIPA) solutions, *Macromolecules* 43 (2010) 480–487. (POLYMER SCIENCE 5/79) IF 4.838.
13. A. Shapira^{*}, Y. G. Assaraf and **Y. D. Livney**, Beta-casein nanovehicles for oral delivery of chemotherapeutic drugs. *Nanomedicine: Nanotechnology, Biology and Medicine* 6 (2010) 119-126. (NANOSCIENCE AND NANOTECHNOLOGY 13/64; MEDICINE, RESEARCH & EXPERIMENTAL 14/106) IF 4.882.
14. R. I. Pinhassi^{*}, Y. G. Assaraf, S. Farber, M. Stark, D. Ickowicz, S. Drori, A. J. Domb, and **Y. D. Livney**, Arabinogalactan-Folic acid-Drug Conjugate for

Targeted Delivery and Target-Activated Release of Anticancer Drugs to Folate Receptor-Overexpressing Cells, *Biomacromolecules*, 11 (2010) 294-303. (POLYMER SCIENCE 4/79, CHEMISTRY, ORGANIC 4/56) IF 5.327.

15. A. Shpigelman*, G. Israeli[^] and **Y. D. Livney**, Thermally-Induced Protein-Polyphenol Co-Assemblies: Beta lactoglobulin-Based complexes as Protective Nanovehicles for EGCG, *Food Hydrocolloids* 24 (2010) 735-743. (CHEMISTRY, APPLIED 10/70; FOOD SCIENCE & TECHNOLOGY 13/128) IF 2.659.
16. A. Shapira*, G. Markman[^], Y. G. Assaraf and **Y. D. Livney**, Beta-Casein Based Nano-Vehicles for Oral Delivery of Chemotherapeutic Drugs: Drug-Protein Interactions and Mitoxantrone Loading Capacity, *Nanomedicine: Nanotechnology, Biology and Medicine* 6 (2010) 547-555. (NANOSCIENCE AND NANOTECHNOLOGY 13/64; MEDICINE, RESEARCH & EXPERIMENTAL 14/106) IF 4.882.
17. N. Ron*, P. Zimet*, J. Bargarum[^] and **Y. D. Livney**, β -Lactoglobulin - Polysaccharide Complexes as Nanovehicles for Hydrophobic Nutraceuticals in Non-Fat Foods and Clear Beverages. *International Dairy Journal* 20 (2010) 686-693. (FOOD SCIENCE & TECHNOLOGY 25/128) IF 2.181.
18. A. Shapira*, D. Epstein[^], Y. G. Assaraf and **Y. D. Livney**, Beta-Casein Nanoparticles as an Oral Delivery System for Chemotherapeutic Drugs: Drug-structure & properties impact on co-assembly. *Pharmaceutical Research* 27 (2010) 2175-2186. (CHEMISTRY, MULTIDISCIPLINARY 22/147, PHARMACOLOGY & PHARMACY 33/252) IF 4.456. The model illustration I prepared in this paper was chosen for the cover of the journal issue.
19. A. Shpigelman*, Y. Paz, O. Ramon* and **Y. D. Livney**, Isomeric sugar effects on thermal phase transition of aqueous PNIPA solutions, probed by ATR-FTIR spectroscopy; insights to protein protection by sugars. *Colloid and Polymer Science* 289 (2011) 281-290. (POLYMER SCIENCE 18/79) IF 2.443.
20. P. Zimet*, D. Rosenberg[^] and **Y. D. Livney** Re-assembled casein micelles and casein nanoparticles as nano-vehicles for ω -3 polyunsaturated fatty acids, *Food Hydrocolloids* 25 (2011) 1270-1276. (CHEMISTRY, APPLIED 10/70; FOOD SCIENCE & TECHNOLOGY 13/128) IF 2.659.
21. N. Manukovsky[^], A. Shpigelman*, R. Edelman[^], and **Y. D. Livney**, Hydration-mediated effects of saccharide stereochemistry on PNIPA gel swelling, *Journal of Polymer Science: Part B: Polymer Physics* 47 (2011) 523-530. (POLYMER SCIENCE 35/79) IF 1.3.
22. A. Shapira*, I. Davidson[^], N. Avni[^], Y. G. Assaraf, and **Y. D. Livney** β -Casein nanoparticle-based oral drug delivery system for potential treatment of gastric carcinoma: Stability, target-activated release and cytotoxicity, *European Journal of Pharmaceutics and Biopharmaceutics* 80 (2) (2012), 298-305 (PHARMACOLOGY & PHARMACY 37/252) IF 4.304.
23. G. Markman* and **Y. D. Livney**, Maillard-reaction based nano-capsules for protection of water-insoluble nutraceuticals in clear drinks, *Food & Function*, (2012) 3, 262-270.

24. A. Shpigelman*, Yifat Cohen[^], **Y. D. Livney**, Beta lactoglobulin EGCG nanoparticles: loading efficiency, stability and gastric digestion. *Food Hydrocolloids* 29 (2012) 57-67 (CHEMISTRY, APPLIED 10/70; FOOD SCIENCE & TECHNOLOGY 13/128) IF 2.659.).
25. M. Haham*, S. Ish-Shalom (equally contributing first authors), M. Hefetz-Kustanovich, M. Nodelman, **Y. D. Livney**, Stability and Bioavailability of Vitamin D Nanoencapsulated in Casein Micelles, *Food & Function* (2012) 3, 737-744.
26. Avi Shpigelman*, Adi Zisapel[^], Yifat Cohen* and Yoav D. Livney, Mechanisms of saccharide protection against epigallocatechin-3-gallate deterioration in aqueous solutions. *Food Chemistry* 139 (2013) 1105–1112.
27. G. Israeli-Lev* and **Y. D. Livney**, Self-assembly of Hydrophobin and its Co-assembly with Hydrophobic Nutraceuticals in Aqueous Solutions: Towards Application as Delivery Systems. *Food Hydrocolloids* 35 (2014) 28-35.
28. A. Shpigelman, Y. Shoham, G. Israeli-Lev & **Y. D. Livney**, β -lactoglobulin-Naringenin complexes: Nano-Vehicles for the delivery of a hydrophobic Nutraceutical. *Food Hydrocolloids* 40 (2014) 214-224.
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1. **Y. D. Livney** and R. L. Bradley, Jr., Factors Affecting Flavor of Whey as an Ingredient in Ice Cream and Other Frozen Desserts, *Cultured Dairy Products Journal* 29 (1994) 23-27.
2. **Y. D. Livney**, M. Corredig and D. G. Dalgleish, Influence of thermal processing on the properties of dairy colloids, *Current Opinion In Colloids and Interface Science* 8 (2003) 359-364. (CHEMISTRY, PHYSICAL 16/127) IF=6.141.
3. **Y. D. Livney**, Milk Proteins as Vehicles for Bioactives, **Invited Review: *Current Opinion in Colloids and Surface Science* 15 (2010) 73-83. (CHEMISTRY, PHYSICAL 16/127) IF=6.141** **This paper was ranked 2nd in the Top 25 Hottest Articles in Current Opinion in Colloids and Surface Science July to Sept. 2010!**
4. A. Shapira*, **Y. D. Livney** H. J. Broxterman and Y. G. Assaraf, Nanomedicine for targeted cancer therapy: towards the overcoming of drug resistance, *Drug Resistance Updates*, 14 (3) (2011), 150-163 (**PHARMACOLOGY & PHARMACY 5/252) IF= 12.312**
5. **(Invited review): Y. D. Livney** and Y. G. Assaraf Rationally designed nanovehicles to overcome cancer chemoresistance, *Adv. Drug Deliv. Rev.* (2013), Nov 30;65(13-14):1716-30. doi: 10.1016/j.addr.2013.08.006. (**IF=13.577**).

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1. **(Invited review): Y. D. Livney**, Complexes and conjugates of biopolymers for delivery of bioactive ingredients via food, in: Delivery and controlled release of Bioactives in foods and nutraceuticals, N. Garti (Ed.), Woodhead Publishing Ltd. Abington, Cambridge, England 2008.
2. **(Invited Review): Y. D. Livney**, Polyelectrolytes: Properties. In: Savinell R., Ota K., Kreysa G. (Ed.) Encyclopedia of Applied Electrochemistry: SpringerReference (www.springerreference.com). Springer-Verlag Berlin Heidelberg, 0. DOI: 10.1007/SpringerReference_303474 2012-09-19
3. **(Invited Review): Y. D. Livney**, Biopolymeric amphiphiles and their assemblies as functional food ingredients and nutraceutical delivery systems, in: Encapsulation Technologies and Delivery Systems for Food Ingredients and Nutraceuticals, N. Garti, D.J. McClements (Eds.), Woodhead Publishing Ltd. Abington, Cambridge, England 2012.

Book Editing

1. Engineering of Foods for Stabilization and Delivery of Bioactives
Yrjo Roos & **Yoav D. Livney** (In Preparation)

Patents granted

1. **Y. D. Livney**, & D. G. Dalgleish, Casein micelle as a natural nano-capsular vehicle for nutraceuticals. European patent granted.
Still pending: (Provisional U.S. patent application 20.4.2006, and PCT 20-4-2007, National patent application 20.10.08).
2. **Y. D. Livney**, β -Lactoglobulin-polysaccharide nanoparticles encapsulating hydrophobic biologically active compounds, US patent No. 8,791,064 was issued on 29.7.14; WO 2009130704 A1.

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3. D. Danino, **Y. D. Livney**, O. Ramon[#], I. Portnaya[#] & U. Cogan, Beta-Casein Assemblies for Enrichment of Food, Beverage and Soft Drinks including Clear Drinks (provisional US Patent application 29.2.2008) (currently after PCT application).
4. **Y. D. Livney**, Yehuda G. Assaraf, Alina Shapira*, Nanoencapsulation of Chemotherapeutic and other Drugs in Beta- Casein Micelles (provisional US Patent application 29.2.2008) (currently after PCT application)
5. **Y. D. Livney** and A. Shpigelman, Thermally-induced protein- polyphenol co-assemblies. (provisional US patent application 61/393,901 17.10.2010)
6. **Y. D. Livney** Protein-polysaccharide conjugates and use for encapsulating nutraceuticals for clear beverage applications (provisional patent application 61/447773, 1.3.2011; US patent application number 13410001 1.3.2012).
7. **Y. D. Livney** (Plant) protein nanoparticles. (provisional patent application submitted Sept 17.2013)
8. **Y. D. Livney** Pectin nanoparticles. (provisional patent application submitted 12.12.2013)

Reviewing journals - external referee for:

Journal of the American Chemical Society (JACS), Biomacromolecules, Langmuir, Nanomedicine, advances in Colloid and interface science, Medicinal Research Reviews, Journal of Controlled Release Food Hydrocolloids, Journal of Agricultural and Food Chemistry, Colloids and Surfaces A: Physicochemical and Engineering Aspects, Journal of Polymer Science B: Polymer Physics, Food Research International, Journal of Food Science, Dairy Science & Technology, Food & Function, Food Engineering Reviews, Colloid and Polymer Science, Polymer, Langmuir, Journal of Biomedical Nanotechnology.
 Guest Editor: Food Biophysics (Springer).

CONFERENCES

(Speaker name underlined; * Graduate students supervised by Dr. Livney;
 ^ Undergraduate students supervised by Dr. Livney; # Research associates in Livney's group)

Invited talks

1. **Y.D. Livney**, I. Portnaya, B. Faupin[^], O. Ramon, Y. Cohen, U. Cogan, S. Mizrahi, Swelling and Contraction of Nonionic Hydrophilic Polymer Gels in Presence of Low Molecular Weight Co-Solutes: An invited talk at *The 37th Annual Convention of the Israeli Institute of Chemical Engineers (IChE 2001)*, Haifa, Israel, Apr. 2001
2. **Y. D. Livney**, E. Semo, D. Danino, and, E. Kesselman, Casein micelle as a natural nano-capsular vehicle for nutraceuticals: An invited talk at *The 42nd Annual Convention of the Israeli Institute of Chemical Engineers (IChE)*, 2006, Tel-Aviv, Israel.
3. **Y. D. Livney**, Nanoencapsulation of Nutraceuticals Using Milk Proteins, An Invited talk at the "Food in the New Era 2007" The International Conference of the Israeli Food Industry, June 2007, Tel Aviv, Israel
4. **Y. D. Livney**, Nature-Inspired Nanodelivery Vehicles for Hydrophobic Bioactives, An Invited talk at *The 73rd annual meeting of the ICS (Israel Chemical Society)* The International Convention Center (Binyanei Ha'Uma), Jerusalem, ISRAEL February 4-5, 2008
5. **Y. D. Livney**, [invited Session Co-Chairman and lecturer] Summary and reflections on food enrichment with vitamin D; IFT Annual Meeting 2009, Anaheim, CA, June 2009
6. Roy I. Pinhassi*, Assaraf, Y. G., Drori, S., Farber, S., Ickowicz, D., Domb, A. J., and **Y. D. Livney**, Novel Arabinogalactan-Folate-Drug Conjugate for Targeted Delivery of Anticancer Drugs, *Polymers for Advanced Technologies (PAT) 2009*, Jerusalem, Sep. 2009 (**Key Note Lecture**).
7. **Y. D. Livney**, Biopolymer-based nanovehicles for delivery of health-promoting compounds, an invited talk at "the third symposium on innovation in food science- industry meets academy", The Robert H. Smith Faculty of Agriculture, Food and Environment, The Hebrew University, Rehovot, Jan 28th 2010.
8. **Y. D. Livney** and Sophia Ish Shalom, Bioavailability of vitamin D in casein micelles, compared to its availability in milkfat. The Second Annual Israeli Dairy-Board Conference, Wahl Conference Center near Bar-Ilan University, March 9th, 2011.
9. **Y. D. Livney**, Maillard reaction-conjugates as vehicles for enrichment of clear beverages with hydrophobic nutraceuticals, an invited talk at the Food in the New Era conference, Tel Aviv, June 20, 2011.

10. **Y. D. Livney**, Saccharide stereochemistry impact on water structure, and on biopolymer behavior in aqueous systems. The Physics, Chemistry, and Biology of Ions and Osmolytes in Solution, Telluride CO USA, July 10-15, 2011
11. **Y. D. Livney**, Nature inspired nanodelivery systems for health promoting bioactives, 3rd Symposium on The Interface Between Nanotechnology and Biology, CFN Karlsruhe-RBNI Technion-Weizmann Institute of Science, Nov. 27-29, 2011, Weizmann Institute of Science, Rehovot.
12. **Y. D. Livney**, Controlling nanocrystal size and morphology by co-assembly with amphiphilic proteins. International Conference on material science and Technology (ICMST 2012) on 10-14 June 2012, Kerala, India.
13. **Y. D. Livney**, The Next Generation in Anti-Cancer Drug Delivery, "Knowledge mining and Bioinformatics Tools to Advance Personalized Diagnostics and Therapeutics", Florence, Italy, Feb. 5th 2012.
14. **Y. D. Livney**, Quadrugnostic nanoparticles for cancer therapy. The 8th Annual Meeting of The Israeli Chapter of The Controlled Release Society September 5-7, 2012, Maalot, Israel.
15. **Y. D. Livney**, Ravit Edelman[^], Iliya Kusner, Renata Kisiliak[^], and Simcha Srebnik, Templating effect of sugars on water structure and on protein stability, EuroCarb 17, July 7-11.2013, Tel Aviv, Israel.
16. **Y. D. Livney**, Quadrugnostic nanoparticles for cancer therapy. The 2nd Up close and personalized, July 25-8.2013, Paris, France.
17. **Y. D. Livney**, Biodegradability & target-activated drug release of nano-delivery systems, Workshop on Biodegradable Polymers in Medicine, 9-11 September 2013, Beit Belgia, The Hebrew University of Jerusalem, Israel.
18. **Y.D. Livney**, Ravit Edelman, & Yehuda G Assaraf, Novel Nanomedical Platforms for Overcoming Anticancer Drug Resistance and for Diagnostics, Israel Chemical Society Annual Meeting, February 5th, 2014, Dan Panorama Hotel in Tel-Aviv
19. **Y.D. Livney**, Ravit Edelman, & Yehuda G Assaraf, Quadrugnostic Nanoparticles for Overcoming Anticancer Drug Resistance and for Diagnostics, Biomedical Engineering 2014, Congress Center, Haifa, Israel, Feb 27th 2014.
20. **Y.D. Livney**, Quadrugnostic nanoparticles for cancer therapy; The Umbrella Symposium, Aachen, Germany, March 23-27, 2014.
21. **Y. D. Livney (Key note)**, Clearly Healthy: Novel Invisible Carriers for Nutraceuticals. The Food Structure and Functionality Forum, March 30th - April 2nd, 2014 Amsterdam, The Netherlands.
22. **Y. D. Livney**, The transparent challenge: Enriching clear beverages with water-insoluble micronutrients. CEFood Congress 2014, Ohrid, Macedonia, May 21st -24th 2014.
23. **Y.D. Livney**, Clearly Healthy: Novel Invisible Carriers for Nutraceuticals. Innovation Forum, Faculty of Agriculture, Hebrew University of Jerusalem, May 29. 2014, Rehovot, Israel.
24. **Y.D. Livney**, Ravit Edelman, & Yehuda G Assaraf, "Novel Quadrugnostic Nanoparticles for Overcoming Anticancer Drug Resistance and for Diagnostics" International Society of Biomedical Polymers & Polymeric Biomaterials' (ISBPPB) Annual Conference, July 9-12, 2014, Washington, D.C., USA.
25. **Y.D. Livney**, Stability and bioavailability of hydrophobic nutraceuticals delivered within milk protein-based nanovehicles, International Dairy Federation, World Dairy Summit, October 27 to October 31, 2014 Tel Aviv. [Conference cancelled due to the Gaza War].

26. **Y.D. Livney**, Ravit Edelman, & Yehuda G Assaraf, “Quadrugnostic Nanoparticles for Overcoming Anticancer Drug Resistance and for Diagnostics” Aarhus University, Denmark, 15-16.9.2014.
27. **Y.D. Livney**, Casein micelles and other protein assemblies as protective matrices for bioactive components. Food Bioprocessing: New functionalities through production, concentration and stabilization of biologically active components- Technology Seminar, Technical University of Munich, Freising-Weihenstephan, 17-19.9.2014.
28. **Y.D. Livney**, Ravit Edelman, & Yehuda G Assaraf, “Novel Quadrugnostic Nanoparticles for Overcoming Anticancer Drug Resistance and for Diagnostics” 9th Intl' Conference of Anticancer Research, Porto Carras, Sithonia, Halkidiki, Greece 6-10 Oct 2014.
29. **Y.D. Livney**, Invisible health promoters, Future Food Horizons Conference, NowFood Centre, University of Chester, Chester, UK 6-7.11.2014

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1. **Y. D. Livney**, E. Semo*, D. Danino and E. Kesselman, Nanoencapsulation of Hydrophobic Nutraceutical Substances within Casein Micelles, XIVth International Workshop on Bioencapsulation, Lausanne, Switzerland, Oct. 6-7, 2006. http://impascience.eu/bioencapsulation/340_contribution_texts/2006-10-05_07-4.pdf
2. **Y. D. Livney** and N. Ron*, Beta-Lactoglobulin (β -Lg) - Polysaccharide Complexes as Nanovehicles for Hydrophobic Nutraceuticals, XVth International Workshop on Bioencapsulation, Vienna, Austria, Sept 6-8, 2007, http://impascience.eu/bioencapsulation/340_contribution_texts/2007-09-06_03-4.pdf?PHPSESSID=9526cfb320dcf887707f5591530539a4
3. **Y. D. Livney**, A. Shapira* and Y. G. Assaraf, Beta- casein micelles as nano-delivery vehicles for chemotherapeutic drugs, XVIth International Workshop on Bioencapsulation, Dublin, Ireland, Sept. 4-6, 2008 <http://bioencapsulation.net/index3.html>
4. **Y. D. Livney**; R. Edelman; I. Kusner; R. Kisiliak; S. Srebnik, Water-structure effect of sugar stereochemistry, and its impact on protein thermal stability, Frontiers in Water Biophysics, Trieste, Italy, May 23-26; 2010. <http://waterbiophysics.eu/en/upload/2012/Book%20TRIESTE%20WATER%20-FINAL%20WEB.pdf>
5. G. Markman* and **Y. D. Livney**, Maillard-reaction based nano-capsules for protection of water-insoluble nutraceuticals in clear drinks. International Congress on Engineering and Food (ICEF11), Athens, Greece, May 22-26.2011, <http://www.icef11.org/content/papers/fpe/FPE467.pdf>
6. Alina Shapira*, Irit Davidson^, Noa Oron^, Prof. Yehuda Assaraf, and **Dr. Yoav Y. D. Livney**, Beta casein nanovehicles for targeted oral drug delivery – towards treatment of gastric cancer, World Journal of Engineering, Vol. 8, Suppl. 1, 2011, ICCE-19 Shanghai, China. [http://wjoe.hebeu.edu.cn/sup.3.2010/S/S1/Shapira,%20Alina%20\(Technion,%20ISrael%20Inst.Tech.\)%201005.pdf](http://wjoe.hebeu.edu.cn/sup.3.2010/S/S1/Shapira,%20Alina%20(Technion,%20ISrael%20Inst.Tech.)%201005.pdf)

Contributed talks (presenter underlined)

30. **Y. D. Livney**, O. Ramon, E. Kesselman, U. Cogan, S. Mizrahi, and Y. Cohen, Swelling and Contraction of Nonionic Hydrophilic Polymer Gels in Presence of

- Low Molecular Weight Co-Solutes: *The Int'l Symposium on the Properties of Water (ISOPOW 2000)*, Zichron-Yaacov, Israel Sept. 2000
31. **Y. D. Livney**, O. Ramon, E. Kesselman, U. Cogan, S. Mizrahi, and Y. Cohen, Swelling and Contraction of Nonionic Hydrophilic Polymer Gels in Presence of Low Molecular Weight Co-Solutes: *Food in the New Era Conference*, Tel-Aviv, Oct. 2001
 32. **Y. D. Livney**, I. Portnaya, B. Faupin[^], O. Ramon, Y. Cohen, U. Cogan, S. Mizrahi, Preferential Interactions between Nonionic Hydrophilic Polymers and Inorganic Salts: Effects on Gel Swelling, Osmotic Pressure and Intrinsic Viscosity of Polyacrylamide: *The 38th Annual Convention of the Israeli Institute of Chemical Engineers (IChE 2002)*, Tel-Aviv, Apr. 2002
 33. **Y. D. Livney**, I. Portnaya, B. Faupin[^], O. Ramon, Y. Cohen, U. Cogan, S. Mizrahi, Interactions between Nonionic Hydrophilic Polymers and Salts: Effects on Gel Swelling and Osmotic Pressure of the Polymer: *The Europolymer Conference (EUPOC 2002)*, Gargnano, Italy, June 2002.
 34. **Y. D. Livney**, and D.G. Dalgleish, Specificity of Disulfide Bond Formation during Thermal Aggregation in Solutions of β -Lactoglobulin and κ -casein. *The annual IFT meeting*, Las-Vegas, Nevada USA, July 2004.
 35. **S. Sandra**, **Y. D. Livney**, and D.G. Dalgleish, Effects of ultra high pressure homogenization and heating on structural properties of casein micelles in reconstituted skim milk powder. *The annual IFT meeting*, Las-Vegas, Nevada USA, July 2004.
 36. **Y. D. Livney**, I. Portnaya, B. Faupin[^], L. Fahoum[^], O. Ramon, Y. Cohen, S. Mizrahi, and U. Cogan, Interactions of Glucose and Polyacrylamide in Solutions and Gels. *The Polymer Networks Conference*, Bethesda, MD, USA, August 2004.
 37. **Y. D. Livney**, E. Semo*, D. Danino, and, E. Kesselman, Casein micelle as a natural nano-capsular vehicle for nutraceuticals. *Bioencapsulation Research Group Workshop*, October 5-7, 2006, Lausanne, Switzerland.
 38. **Y. D. Livney**, E. Semo*, D. Danino, and, E. Kesselman, Casein micelle as a natural nano-capsular vehicle for nutraceuticals. *Israel-Netherlands Meeting*, November 20-21, 2006, Wageningen, the Netherlands.
 39. **Y. D. Livney**, N. Ron*, Beta-Lactoglobulin (β -Lg) - Polysaccharide Complexes as Nanovehicles for Hydrophobic Nutraceuticals, *Bioencapsulation Research Group*, Vienna, Sep. 5-8th 2007.
 40. **Y. D. Livney**, D. Knoh[^], Nanoencapsulation of Hydrophobic Nutraceuticals within Self-Reassembled Casein Micelles, Reformed during Ultra-High-Pressure-Homogenization. *2nd International Symposium- Delivery of Functionality in Complex Food Systems: Physically-Inspired Approaches From Nanoscale To Microscale*. university of Massachusetts, Amherst, Massachusetts, USA, October 8th to 10th, 2007
 41. **A. Shpigelman***, I. Portnaya[#], I. Kusner[#], O. Ramon[#], & **Y. D. Livney**, Saccharide-Structure Effect on Protein Behavior in Aqueous Media, Using PNIPA as a Model for Protein; *UKPCF2007 International Conference on Polymer Colloids*, Warwick University, Warwick UK, Sept. 2007
 42. **P. Zimet***, I. Portnaya[#], and **Y. D. Livney**, β -lactoglobulin as a Nano-Vehicle for Omega-3 Polyunsaturated Fatty Acids, *Food Colloids 2008*, April 2008, Le Mans, France
 43. **A. Shapira***, G. Markman[^], Y. G. Assaraf and **Y. D. Livney**, Beta-Casein Micelles as Nano-Delivery Vehicles for Chemotherapeutic Drugs, *Polymer Colloids 2008*, Prague, Czech Republic, 20-24 July 2008.

44. **Y. D. Livney**, Nature-Inspired Milk-Protein Based Nano-Vehicles for Nutraceuticals *The 17th International Symposium on Surfactants in Solution (SIS)*, Berlin convention center (BCC), Berlin, Germany, August 17-22, 2008
45. A. Shpigelman*, I. Portnaya#, I. Kusner#, O. Ramon# & **Y. D. Livney**, Saccharide-Structure Effect on PNIPA Behavior in Aqueous Media, *19th Polymer Networks Group Meeting in Cyprus*, 22-26 June 2008
46. A. Shapira*, Y. G. Assaraf and **Y. D. Livney**, Beta-casein micelles as nano-delivery vehicles for chemotherapeutic drugs, *RBNI Fall symposium*, Hagoshrim, Dec. 2008.
47. S. Srebnik, R. Matza*, I. Kusner#, & **Y. D. Livney**, Water Structuring Effect of Sugars, *American Physical Society (APS) MARCH Meeting-Pittsburg*, Pennsylvania, USA. 2009.
48. A. Shapira*, D. Epstein^, Y. G. Assaraf, and **Y. D. Livney**, Beta-casein micelles as oral nano-delivery vehicles for chemotherapeutic drugs, *Polymers for Advanced Technologies (PAT) 2009*, Jerusalem, Sep. 2009.
49. A. Shpigelman*, G. Israeli*, and **Y. D. Livney**, Heat-Induced Beta Lactoglobulin-Based Nanoparticles as Novel Protective Carriers for EGCG in Clear Beverage; *Delivery of Functionality in Complex Food Systems*, Wageningen, The Netherlands, Oct, 2009.
50. **Y. D. Livney**, Milk Proteins as vehicles for bioactives, *Food Colloids 2010*, Granada Spain, March 2010.
51. **Y. D. Livney**, milk-proteins as nanovehicles for health-promoting compounds. *Nanotechnologies for food and consumer products*, Chester, UK, March 2010.
52. **Y. D. Livney**, R. Edelman*, I. Kusner#, R. Kisiliak* and S. Srebnik, Water-structure effect of sugar stereochemistry, and its impact on protein thermal stability, *Frontiers in Water Biophysics*, Trieste, Italy, May 23-26th 2010.
53. A. Shpigelman*, G. Israeli^ and **Y. D. Livney**, Heat-Induced β -Lactoglobulin-Based Nanoparticles as Novel Protective Carriers for EGCG in Clear Beverages, The 4th European Workshop on Food Engineering and Technology, Presentations of selected national PhD students in food engineering and technology at European level, Belgrade, May 27– 28th, 2010
54. T. S. Demina, T. A. Akopova, A. N. Shchegolikhin, A. O. Chernyshenko, **Y. D. Livney**, E. A. Markvicheva, A. N. Zelenetskii, A. N. Ozerin, Nanostructured amphiphilic materials based on chitosan: solid-state synthesis and characterization, Proc. 1-st Russian – Hellenic Symposium on Polymeric Biomaterials and Bionanomaterials: Recent Advances Safety and Toxicology Issues, 02-09 may 2010, Heraklion, Crete, Greece, 48-49.
55. T.A. Akopova, E.A. Markvicheva, A.N. Zelenetskii, A.N. Ozerin, L.V. Vladimirov, **Y.D. Livney**. Solid State Reactive Blending - a Promising Way to Biomedical Polymer Materials, Proc. III International Conference Fundamental Bases of Mechanochemical Technologies (FBMT-2009), May 2009, Novosibirsk, Russia, 80.
56. M. Haham, M. Kustanovich, S. Ish-Shalom & **Y. D. Livney**, Stability and Bioavailability of Vitamin D Nanoencapsulated in Casein Micelles, *Food in the new Era*, Tel Aviv, June 2010
57. A. Shpigelman*, G. Israeli^, Yifat Cohen^ and **Y. D. Livney**, Heat-Induced β -Lactoglobulin-Based Nanoparticles as Novel Protective Carriers for EGCG in Clear Beverages, *Food in the new Era*, Tel Aviv, June 2010
58. A. Shapira*, I. Davidson^, Y. G. Assaraf and **Y. D. Livney**, Beta-Casein Micelles as Oral Nano-Vehicles for Chemotherapeutic Drugs, The 7th annual meeting of the Israeli Chapter of the Controlled Release Society, Haifa, October 2010

59. **Y. D. Livney** and G. Markman, Maillard-reaction based nano-capsules for protection of water-insoluble nutraceuticals in clear drinks, International Congress on Engineering and Food (ICEF11), Athens, Greece, May 22-26.2011
60. A. Shapira*, I. Davidson[^], N. Oron[^], Y. G. Assaraf and **Y. D. Livney** Milk protein-based Nanovehicles for Oral delivery and targeted release of Chemotherapeutic Drugs, BioMed Israel, Tel-Aviv, May 23-25.2011
61. **Y. D. Livney** and G. Markman, Maillard-conjugation based core-shell co-assemblies for nanoencapsulation of hydrophobic nutraceuticals in clear beverages, "Delivery of Functionality in Complex Food Systems", Guelph, Ontario, Canada, Aug 21-24.2011
62. A. Shapira*, I. Davidson[^], N. Oron[^], Y. G. Assaraf and **Y. D. Livney**, Beta Casein Nanovehicles for Targeted Oral Drug Delivery – Towards Treatment of Gastric Cancer, 1st meeting of the Israeli Society of Biotechnology Engineering, Dec 25th. 2011 Ramat Gan, Israel.
63. A. Shapira*, I. Davidson[^], N. Oron[^], Y. G. Assaraf and **Y. D. Livney**, Beta Casein Nanovehicles for Targeted Oral Drug Delivery – Towards Chemo-treatment of Gastric Cancer, Up Close and Personal (UPCP), Feb 2-5, 2012 Florence, Italy.
64. Michal Haham*, Sophia Ish-Shalom, Marina Nodelman, Irit Duek, Elena Segal, Marina Kustanovich and **Yoav D. Livney**, stability and bioavailability of vitamin D nanoencapsulated in casein micelles, 6th Central European Congress on Food, Novi Sad Serbia, May 23-26, 2012.
65. G. Israeli-Lev* and **Y. D. Livney**, Self-assembly of Hydrophobin and its Co-assembly with Hydrophobic Nutraceuticals in Aqueous Solutions: Towards Application as Delivery Systems. Delivery of Functionality in Complex food Systems 2013", Haifa, Israel, Sept 29th-Oct 3rd 2013
66. Yoni Levinson, Sophia Ish-Shalom, Marina Hefetz & **Yoav D. Livney** Bioavailability of vitamin D₃-loaded re-assembled casein micelles in fat-free yogurt. Delivery of Functionality in Complex food Systems 2013", Haifa, Israel, Sept 29th-Oct 3rd 2013
67. Yifat Cohen , Sophia Ish-Shalom, Uri Lesmes, Elena Segal and **Yoav D. Livney**, Bioaccessibility and Bioavailability of Hydrophobic Nutraceuticals Encapsulated in Milk Protein Nanoparticles, Delivery of Functionality in Complex food Systems 2013", Haifa, Israel, Sept 29th-Oct 3rd 2013.
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Poster presentations (presenter underlined)

69. Y.D. Livney, O. Ramon, E. Kesselman, U. Cogan, S. Mizrahi, and Y. Cohen, Swelling and Contraction of Nonionic Hydrophilic Polymer Gels in Presence of Low Molecular Weight Co-Solutes: *the Int'l Symposium on the Properties of Water (ISOPOW 2000)*, Zichron-Yaacov, Israel Sept. 2000
70. Y.D. Livney, and D.G. Dalgleish, Tertiary Structure Study of β -Casein by Specific Intramolecular Cross-Linking and Mass Spectrometry. *Food Colloids 2004 conference*, Harrogate, United Kingdom, April 2004.
71. Y.D. Livney, and D.G. Dalgleish, The use of specific crosslinking agents to study molecular conformations in food proteins. *The 7th International Hydrocolloids Conference* Aug. 29 – Sept. 1st 2004, Melbourne, Australia.
72. E. Semo*, E. Kesselman, D. Danino and **Y. D. Livney**, Casein micelle as a natural nano-capsular vehicle for nutraceuticals, *Food Colloids 2006*, April 23-26 2006, Montreaux, Switzerland

73. Nadav Ron* & **Yoav D. Livney**, β -Lg-Polysaccharide Complexes as Nanovehicles for Hydrophobic Nutraceuticals, *Bioencapsulation Research Group Conference*, Lisbon, Portugal, April 26-28, 2007.
74. Dina Knoh^ & **Yoav D. Livney**, Nanoencapsulation of Nutraceuticals within Self-Reassembled Casein Micelles, Using a New Ultra-High-Pressure-Homogenization Process, *World Dairy Summit*, Dublin, Ireland 29.9-4.10.07
75. Nadav Ron* & **Yoav D. Livney**, β -Lg-Polysaccharide Complexes as Nanovehicles for Hydrophobic Nutraceuticals, *World Dairy Summit, Dublin, Ireland 29.9-4.10.07*.
76. Patricia Zimet* , Irina Portnaya#, Nadav Ron* & **Yoav Livney**, β -Lactoglobulin as a Nano-vehicle for Omega-3 Fatty Acids, *Innova*, Montevideo, Uruguay, Oct, 2007.
77. A. Shapira* and Y. G. Assaraf and **Y. D. Livney**, Beta- Casein micelles as nano-delivery vehicles for chemotherapeutic drugs, *RBNI Winter School*, Dead Sea, Feb. 2008
78. R. I. Pinhassi*, D. Ickowicz, S. Farber, A. J. Domb, Y. G. Assaraf and **Y. D. Livney**, Arabinogalactan as a Targeted Nano-Vehicle for Anticancer Therapeutics, *RBNI Winter School*, Dead Sea, Feb. 2008
79. P. Zimet* and **Y. D. Livney**, β -Lactoglobulin/Pectin Electrostatic Complexes as Nano-vehicles for Omega-3 Fatty Acids, *RBNI Winter School*, Dead Sea, Feb. 2008
80. **Y. D. Livney**, A. Shapira* and Y. G. Assaraf, Beta- Casein micelles as nano-delivery vehicles for chemotherapeutic drugs, *XVIth International Conference on Bioencapsulation*, Dublin, Ireland. Sept 4-8, 2008
81. P. Zimet* and **Y. D. Livney**, β -Lactoglobulin and its Nano-Complexes with Pectin as Vehicles for ω -3 Polyunsaturated Fatty Acids, *RBNI Fall symposium*, Hagoshrim, Dec. 2008
82. A. Shapira* and Y. G. Assaraf and **Y. D. Livney**, Beta-Casein Micelles as Oral Nano-Delivery Vehicles for Chemotherapeutic Drugs, *Nano-Israel 2009*, March 30-31, 2009, Jerusalem.
83. J. Bargarum^, D. Danino, and **Y. D. Livney**, Nanoencapsulation of Vitamin D in Beta Casein Micelles; *IFT Annual Meeting 2009*, Anaheim, CA, June 2009.
84. A. Shapira*, I. Davidson^, Y. G. Assaraf and **Y. D. Livney**, β -Casein - Taxol Nanoparticles for Oral Delivery for Gastric Carcinoma: Stability and Target-Activated Release, *RBNI Winter School, Ein Gedi*, Feb. 2010.
85. A. Shpigelman*, G. Israeli^ and **Y. D. Livney**, Heat-Induced β -Lactoglobulin-Based Nanoparticles as Novel Protective Carriers for EGCG in Clear Beverages, *RBNI Winter School, Ein Gedi*, Feb. 2010.
86. A. Shapira*, I. Davidson^, Y. G. Assaraf and **Y. D. Livney**, Beta-Casein Micelles as Oral Nano-Vehicles for Chemotherapeutic Drugs, The 7th annual meeting of the Israeli Chapter of the Controlled Release Society, Haifa, October 2010 (Poster selected as one of ~10% of the posters for oral presentation too).
87. N. Kuszpet^, A. Shpigelman*, R. Edelman^, O. Ramon# and **Y. D. Livney**, Hydration-mediated effects of saccharide stereochemistry on PNIPA gel swelling, Polymer Networks Group 20th Conference, Aug 29th-Sept 2nd 2010 Goslar Germany.
88. M. Haham*, M. Kustanovich, S. Ish-Shalom & **Y. D. Livney**, Stability and Bioavailability of Vitamin D Nanoencapsulated in Casein Micelles, The 7th NIZO Dairy Conference, Papendal, The Netherland, Sept. 20-22, 2011.
89. A. Shpigelman*, G. Israeli^, Yifat Cohen^ and **Y. D. Livney**, Heat-Induced β -Lactoglobulin-Based Nanoparticles as Novel Protective Carriers for EGCG in

- Clear Beverages, 1st meeting of the Israeli Society of Biotechnology Engineering, Dec 25th. 2011 Ramat Gan, Israel.
90. Gal Israeli* & **Yoav D. Livney**, Formation and Entrapment of Hydrophobic Bioactive Nanocrystals within Hydrophobin Nano-Shells: Novel Vehicles for Nutraceutical Delivery, 1st meeting of the Israeli Society of Biotechnology Engineering, Dec 25th. 2011 Ramat Gan, Israel.
 91. Yedidya Zagury[^], Jane Levinson[#], Sahar Halabi[^] and **Yoav D. Livney**, Encapsulation of Conjugated Linoleic Acid by Maillard-Reaction-Based Protein - Oligo-Saccharide Conjugates for Delivery in Clear Beverages, 1st meeting of the Israeli Society of Biotechnology Engineering, Dec 25th. 2011 Ramat Gan, Israel.
 92. Hyaluronic acid based quadrugnostic nanoparticle for cancer therapy, Ravit Edelman, Yehuda G. Assaraf, Inna Levitzky[^], and **Yoav D. Livney**, The 8th Annual Meeting of The Israeli Chapter of The Controlled Release Society September 5-7, 2012, Maalot, Israel.
 93. Hyaluronic-Acid Based Quadrugnostic Nanoparticles for Cancer Therapy, Ravit Edelman, Yehuda G. Assaraf, Inna Levitzky[^], and **Yoav D. Livney**, Eurocarb 17, July 7-11. 2013, Tel Aviv, Israel.
 94. Yanai Shoham, Avi Shpigelman & **Yoav D. Livney**, Suppression of crystallization by β -lg, for delivery of hydrophobic bioactives: the case of naringenin. Delivery of Functionality in Complex food Systems 2013", Haifa, Israel, Sept 29th-Oct 3rd 2013.
 95. Yonatan Levinson & **Y. D. Livney**, Soybean β -conglycinin binds vitamin D₃ and protects it against degradation. Delivery of Functionality in Complex food Systems 2013", Haifa, Israel, Sept 29th-Oct 3rd 2013.
 96. Ofer Setter & **Y. D. Livney**, Sugar stereochemistry effect on self-assembly of an amphiphilic protein. Delivery of Functionality in Complex food Systems 2013", Haifa, Israel, Sept 29th-Oct 3rd 2013.
 97. Gal Israeli-Lev, Marina Pitchkhadze, **Yoav D. Livney**, Applying proteins to control nanocrystal size and morphology of hydrophobic bioactives, using genistein as a model. Delivery of Functionality in Complex food Systems 2013", Haifa, Israel, Sept 29th-Oct 3rd 2013.
 98. Maya Bar-Zeev, Yehuda G. Assaraf, **Yoav D. Livney**, Beta-casein nanoparticles for oral delivery of hydrophobic compound combinations. Delivery of Functionality in Complex food Systems 2013", Haifa, Israel, Sept 29th-Oct 3rd 2013.
 99. Yedidya Zagury, Shlomit David, **Yoav D. Livney**, Nanocomplexes of curcumin and soy β -conglycinin for enrichment of clear beverages. Delivery of Functionality in Complex food Systems 2013", Haifa, Israel, Sept 29th-Oct 3rd 2013.

Participation in organizing conferences

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| 2007 | Chairman of the "Technology Track" in " <i>Food in the New Era 2007</i> " <i>The International Conference of the Israeli Food Industry</i> , June 2007, Tel Aviv, Israel |
| 2007 | Member of the Scientific Advisory Committee of the <i>IDDST's Summit Conference: Advances and Challenges Toward Major Diseases</i> , which was held November 4-7 in Xi'an and Beijing. |
| 2008 | Chairman of a session at the <i>Polymer Network Group Conference</i> , Larnaka, Cyprus, June 22-26 2008 |

- 2009 Invited Co-Chairman of a session on Vitamin D and Health in the *IFT 2009*, June 6-10, Anaheim, CA, USA
- 2010 Co-Chairman of the “Studies in nutrition and technology” session, under the “Nutrition track” in *Food in the New Era 2007* The International Conference of the Israeli Food Industry, June 21st 2010, Tel Aviv, Israel.
- 2012 Session Chairman at the Russell Berrie Fall Symposium, Tzuba, Israel, Dec 26-27.2012.
- 2013 **Conference Organizer** (jointly with Prof. Nissim Garti, Hebrew Univ.) of the next "Delivery of Functionality in Complex food Systems 2013", Haifa, Israel, Sept 29th-Oct 3rd 2013. <http://DOF2013.org>
- 2013 Chairman of a session on Salt reduction at the “*Food in the New Era 2013*” *The International Conference of the Israeli Food Industry*, June 2013, Ramat Gan, Israel
- 2013 Chairman of a session on Bioactive Carbohydrates in Orally Consumed Formulations Eurocarb 17, July 7-11, 2013, Tel Aviv, Israel.
- 2014 Member of the scientific committee, CEFood Congress 2014, Ohrid, Macedonia, May 21st -24th 2014.
- 2014 **Scientific Chairman** of the “*Food in the New Era 2014*” *The International Conference of the Israeli Food Industry*, June 16-17, 2014, Ramat Gan, Israel.
- 2014 Chairman of the Dairy Science & Technology Committee and member of the Scientific Committee at the World Dairy Summit, Oct. 27-31, Tel Aviv. 2014

SPECIAL PROFESSIONAL ACTIVITIES

- 1996 Organizing of and lecturing in a 1-day workshop for the Strauss technologists, entitled “Objective (Instrumental) Measurement of Sensory Attributes of Foods, Shavei Zion, Israel, [Invited Speakers included: Prof. D. Lancet, Dr. M. Tishel. Among the lecturers was also Dr. D. Gil, Chief Scientist of Strauss.]
- 1997 Organizing and teaching a HACCP course for technologists in Strauss Dairies Ltd. and Strauss Ice Creams Ltd., Naharia, Israel
- 2002 An invited lecture, entitled: Swelling and Contraction of Hydrophilic Polymer Gels in Presence of Low Molecular Weight Solutes, at a technologists assembly entitled Stabilizers, In Strauss, Carmiel, Israel
- 2004 A two-week visit to Weihenstephan University, Freising, Germany as part of the GIF-YS project, and giving an invited seminar there entitled: Casein micelle as a natural nano-capsular vehicle for nutraceuticals.
- 2006 An invited lecture entitled: Food Nanotechnology, Chief Technologists Forum, Strauss-Elite, Bar-Lev site, Israel.
- 2010 An invited Seminar lecture at Tel Aviv University, entitled: Biopolymeric Nanovehicles for Health-Promoting Compounds
- 2010 An invited lecture, entitled: From assembly of water molecules around sugars, to assembly of milk proteins around anti-cancer drugs. Chief Technologists Forum, Strauss-Group, Bar-Lev site, Israel.
- 2012 Invited Seminar lecture at Ort Braude: Nature-inspired Nanovehicles for Health-Promoting Compounds, May 16th, 2012

- 2013 Invited lecture entitled: “Nano delivery agents for disease prevention, diagnostics and therapy” in the 10th Annual Mutav-Teachers Assembly, June 2013, Technion, IIT.
- 2013 Invited Seminar lecture at Ort Braude: Nano delivery agents for disease prevention, diagnostics and therapy. Dec. 2013
- 2014 Invited lecture at the Cancer & Signaling Forum, at the Technion: Novel Nanomedical Platforms for Overcoming Anticancer Drug Resistance and for Diagnostics. Feb. 2014
- 2014 Invited lecture at the Nuclear Research Center, Dimona: Water-structure effect of sugar stereochemistry, and its impact on protein thermal stability. Feb. 14

Departmental responsibilities

- 2005 - 2007 Undergraduate Seminar Forum Coordinator
- 2007 - 2009 Departmental Seminar Coordinator
- 2007- Academic Co-head of the Russell Berrie Nanoparticles & Nanometric Systems Characterization Center.
- 2009 - 2010 First year B.Sc. Students' Consultant.
- 2010 - 2011 Second year B.Sc. Students' Consultant.
- 2010 - Faculty Representative in the steering committee for the establishment of the International School at the Technion.
- 2011 - 2012 Third Year B.Sc. Students' Consultant.
- 2010 - 2012 Faculty representative in the “Northern Consortium” (Technion-Ort Braude-Migal) initiative to establish a National Food Research Institute in the Galilee.
- 2012 - 2013 Fourth Year B.Sc. Students' Consultant.
- 2012- Faculty representative at Chemical Engineering Faculty meetings