

# CURRICULUM VITAE

August 18, 2022

**Name & age:** Zahari Penkov Vinarov, 37 years old

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**SCOPUS Author ID:** 55233825500

**Web of Science Researcher ID:** K-7184-2012

**Articles in JCR journals:** 23

**Total citations:** 478

**h-index:** 13

*\*Citation overview from SCOPUS, exclude self-citations of all authors*



**Current institution:** Sofia University, Dept. of Chemical and Pharmaceutical Engineering

**Personal page:** [https://dce.uni-sofia.bg/z\\_p\\_vinarov\\_pubs.xhtml](https://dce.uni-sofia.bg/z_p_vinarov_pubs.xhtml)

**Department website:** <https://dce.uni-sofia.bg/>

**Summary of academic achievements (in Bulgarian):** Извадка от „[Авторите](#)“, СУ

## LANGUAGES

English	Level C2 (Proficient user)
Russian	Level C1 (Proficient user)
French	Level B2 (Independent user)
Bulgarian	Native

## ACADEMIC DEGREES

2021	<u>PhD Pharmacy</u> (Drug solubilization), Sofia University, Bulgaria
2014	<u>PhD Chemistry</u> (Lipid digestion), Sofia University, Bulgaria
2009	<u>M. Sc. Pharmacy</u> , Medical University – Sofia, Bulgaria

## ACADEMIC APPOINTMENTS

2022 –	Associate Professor, Department of Chemical and Pharmaceutical Engineering, Faculty of Chemistry and Pharmacy, Sofia University, Bulgaria
2019 – 2021	<u>Postdoc</u> , Drug Delivery and Disposition, Department of Pharmaceutical and Pharmacological Sciences, KU Leuven, Leuven, Belgium
2016 – 2021	<u>Chief Assistant Professor</u> , Department of Chemical and Pharmaceutical Engineering, Faculty of Chemistry and Pharmacy, Sofia University, Bulgaria
2014 – 2016	<u>Assistant Professor</u> , Department of Chemical and Pharmaceutical Engineering, Faculty of Chemistry and Pharmacy, Sofia University, Bulgaria
2008 – 2011	<u>Research associate</u> , Department of Chemical Engineering, Faculty of Chemistry, Sofia University, Bulgaria

## SCIENTIFIC VISITS

10 – 17 September 2008	Visiting researcher, Unilever R&D, Port Sunlight, UK
19 March – 1 April 2011	Visiting researcher, Unilever R&D, Colworth Science Park, UK

## RESEARCH INTERESTS

Oral delivery of poorly-water soluble drugs; Lipid digestion and *in vitro* models of the GI tract; Surfactants and interfacial phenomena; Emulsions

## TEACHING EXPERIENCE

- 2022 – Pharmaceutical Technology, Pharmacy Masters (Lectures)
- 2014 – 2019 Pharmaceutical Technology, Pharmacy Masters (Lectures & practical exercises)
- 2013 – Dispersions in Pharmaceutical Technology, Masters (Lectures)
- 2011 – 2013 Chemical Kinetics, Bachelor (Seminars & practical exercises)

## DEPARTMENT ACTIVITIES

- 2022 – Responsible person – handling of narcotic substances
- 2022 – Department safety officer
- 2011 – 2019 Writing Reports of the research projects with industrial partners
- 2015 – 2019 Department safety officer
- 2017 – 2019 Technical specifications preparation for procurement of scientific equipment

## MEMBERSHIP IN PROFESSIONAL SOCIETIES AND OTHERS

American Association of Pharmaceutical Scientists (AAPS), 2012 – present (9 years)  
European Federation for Pharmaceutical Sciences (EUFEPS), 2013 – present (8 years)

**European Pharmacopoeia (EDQM) Group of Experts 13H (Fatty oils & derivatives, polymers), 2019 – present (3 years)**

## EDITORIAL OR REVIEWER BOARD MEMBER

2020 – present [Editorial Board member](#), *Journal of Pharmacy and Pharmacology* (Wiley/Royal Pharmaceutical Society, **IF = 3.8**)

2020 – present [Topic editor](#), *Molecules* (MDPI, **IF = 4.4**)

2020 – present [Reviewer Board member](#), *Pharmaceutics* (MDPI, **IF = 6.3**)

[Reviewing manuscripts](#) for: *Chemical Science* (**IF = 9.4**), *Journal of colloid and interface science* (**IF = 7.5**), *Journal of materials chemistry B* (**IF = 5.3**), *Journal of molecular liquids* (**IF = 5.1**), *Molecular pharmaceutics* (**IF = 4.2**), *Langmuir* (**IF = 3.6**), *Drug delivery and ind. pharmacy* (**IF = 2.4**)

## PARTICIPATION IN RESEARCH PROJECTS

### Funded from public organizations

- 2018 - 2020 Bulgarian National Science fund, “Study of the drug absorption-related processes in the gut”, Project No. ДКОСТ 01/12, 23.11.2018
- 2017 - 2018 European Research Council (ERC), “ShipShape: Bottom-up Energy Efficient Emulsification and Structured Materials”, Grant agreement ID: 766656
- 2015 - 2017 University of Cambridge, “Phase behaviour of emulsion droplets during phase transition”
- 2014 - 2015 University of Cambridge, “Control of particle shape in phase-transition dispersions”
- 2012 - 2015 COST action D43, result dissemination

## Funded from industrial partners

- 2005 – 2019 Unilever (13 projects)  
2017 – 2018 BIOKIT R&D, Spain (1 project)  
2017 – 2018 Productora Alysa SPA (1 project)

## ORGANIZATION OF INTERNATIONAL SCHOOLS AND CONFERENCES

- 2022 **Co-chair of the Scientific committee**, “Intestinal absorption assessment and enabling formulations”, 5<sup>th</sup> all-workgroups meeting of the “European network on understanding of gastrointestinal absorption-related processes” (COST action UNGAP), 21-22 March, Lisbon, Portugal, ([booklet](#))
- 2019 – 2020 **Coordinator & moderator of 6 webinars** on Oral drug absorption and advanced formulations with **400+ participants**
- 2019 **Chair of the organizing committee**, 2<sup>nd</sup> All-workgroups meeting of the “European network on understanding of gastrointestinal absorption-related processes” (COST action UNGAP), 12-13 February, Sofia, Bulgaria, **120+ participants from 28 countries** ([booklet](#))
- 2011 **Technical support**, Training School “Fluids and Solid Interfaces”, ESF COST Action D43 Colloid and Interface Chemistry for Nanotechnology, 12-15 April, Sofia, Bulgaria
- 2010 **Registration desk and support**, EUFOAM International Conference, 14-16 July, Borovets, Bulgaria, **200+ participants from 20 countries**

## PROJECT MANAGEMENT POSITIONS

- 2022 - Janssen Pharmaceutica, R&D project, **Project leader**
- 2022 - Center of Competence “Sustainable utilization of bio-resources and waste of medicinal and aromatic plants for innovative bioactive products”, Department of Product development, **Chair**
- 2022 - Bulgarian National Science fund, National Scientific Program “Excellent Research And People For The Development Of European Science” /VIHREN/, 2021, project “3D virtual gut: a multi-functional, personalized platform for studying and predicting oral drug absorption”, No. KII-06-ДВ/3, 15.12.2021, **principal investigator**
- 2017 - 2017 Sofia University Research fund, “Role of particle shape on controlled drug release”, Project No. 80-10-225/25.04.2017 – **Project leader**
- 2019 – present COST Action CA16205 UNGAP – **Core group member; co-lead WG3**

## PUBLICATIONS

### Thesis

- 2022 Micellar solubilization of hydrophobic drugs
- 2014 In vitro studies of triglyceride lipolysis in the gastro-intestinal tract

### Papers in professional journals (indexed in JCR):

1. Best Practices in Current Models Mimicking Drug Permeability in The Gastrointestinal Tract - An UNGAP Review.. J. O'Shea, P. Augustijns, M. Brandl, D. Brayden, J. Brouwers, B. Griffin, R. Holm, A. Jacobsen, H. Lennernäs, Z. Vinarov, C.O'Driscoll, Eur. J. Pharm. Sci. 170 (2022) 106098; doi: 10.1016/j.ejps.2021.106098

2. Interplay between bulk aggregates, surface properties and foam stability of nonionic surfactants.. F. Mustan, N. Politova-Brinkova, Z. Vinarov, D. Rossetti, P. Rayment, S. Tcholakova, *Adv. Colloid Interface Sci.* 302 (2022) 102618; doi: 10.1016/j.cis.2022.102618
3. Self-emulsification in chemical and pharmaceutical technologies. D. Cholakova, Z. Vinarov, S. Tcholakova, N. Denkov, *Current Opinion in Colloid & Interface Sci.* 59 (2022) 101576; doi: 10.1016/j.cocis.2022.101576
4. Supersaturation and Solubilization upon In Vitro Digestion of Fenofibrate Type I Lipid Formulations: Effect of Droplet Size, Surfactant Concentration and Lipid Type, V. Katev, S. Tsibranska-Gyoreva, Z. Vinarov, S. Tcholakova, *Pharmaceutics* 13 (2021) 1287; doi: 10.3390/pharmaceutics13081287
5. Impact of Gastrointestinal Tract Variability on Oral Drug Absorption and Pharmacokinetics: An UNGAP Review, Z. Vinarov, M. Abdallah, J. Agundez, K. Allegaert, A. Basit, M. Braeckmans, J. Ceulemans, M. Corsetti, B. Griffin, M. Grimm, D. Keszthelyi, M. Koziolok, C. Madla, C. Matthys, L. McCoubrey, A. Mitra, C. Reppas, J. Stappaerts, N. Steenackers, N. Trevaskis, T. Vanuytsel, M. Vertzoni, W. Weitschies, C. Wilson, P. Augustijns, **Eur. J. Pharm. Sci.** 162 (2021) 105812; doi: 10.1016/j.ejps.2021.105812
6. Current challenges and future perspectives in oral absorption research: An opinion of the UNGAP network. Z. Vinarov, B. Abrahamsson, P. Artursson, H. Batchelor, P. Berben, A. Bernkop-Schnürch, J. Butler, J. Ceulemans, N. Davies, D. Dupont, G. Flaten, N. Fotaki, B. Griffinn, V. Jannin, J. Keeminki, F. Kesisoglou, M. Koziolok, M. Kuentz, A. Mackie, A. Meléndez-Martínez, M. McAllister, A. Müllertz, C. O'Driscoll, N. Parrott, J. Paszkowska, P. Pavek, C. Porter, C. Reppas, C. Stillhart, K. Sugano, E. Toader, K. Valentová, M. Vertzoni, S. De Wildt, C. Wilson, P. Augustijns. **Adv. Drug. Deliv. Rev.** 171 (2021) 289-331.
7. Mechanisms of Drug Solubilization by Polar Lipids in Biorelevant Media, V. Katev, Z. Vinarov, S. Tcholakova, **Eur. J. Pharm. Sci.** 159 (2021) 105733; doi: 10.1016/j.ejps.2021.105733
8. Solubilization of Itraconazole by Surfactants and Phospholipid-Surfactant Mixtures: Interplay of Amphiphile Structure, pH and Electrostatic Interactions. Z. Vinarov, G. Gancheva, N. Burdzhiev, S. Tcholakova, **J. Drug Deliv. Sci. Technol.** 57 (2020) 101688; doi: 10.1016/j.jddst.2020.101688
9. Role of lysophospholipids on the interfacial and liquid film properties of enzymatically modified egg yolk solutions. Gazolu-Rusanova, D., Mustan, F., Vinarov, Z., Tcholakova, S., Denkov, N., Stoyanov, S., de Folter, J.W.J. **Food Hydrocolloids**, 99 (2020), doi: 10.1016/j.foodhyd.2019.105319
10. Successful Oral Delivery of Poorly Water-soluble Drugs Both Depends on The Intraluminal Behavior of Drugs and of Appropriate Advanced Drug Delivery Systems. B. J. Boyd, C. A.S. Bergström, Z. Vinarov, M. Kuentz, J. Brouwers, P. Augustijns, M. Brandl, A. Bernkop-Schnürch, N. Shrestha, V. Prétat, A. Müllertz, A. Bauer-Brandl, V. Jannin, **Eur. J. Pharm. Sci.** 137 (2019); doi: 10.1016/j.ejps.2019.104967

11. Effect of Surfactant–Bile Interactions on the Solubility of Hydrophobic Drugs in Biorelevant Dissolution Media. Z. Vinarov, V. Katev, N. Burdzhiev, S. Tcholakova, N. Denkov, **Mol. Pharm.** *15* (2018) 5741–5753 doi: 10.1021/acs.molpharmaceut.8b00884
12. Albendazole Solution Formulation via Vesicle-To-Micelle Transition of Phospholipid-Surfactant Aggregates. Z. Vinarov, G. Gancheva, V. Katev, S. Tcholakova. **Drug. Dev. Ind. Pharm.** (2018) doi: 10.1080/03639045.2018.1438461
13. Effect of Surfactant Molecular Structure on Progesterone Solubilization. Z. Vinarov, P. Dobрева, S. Tcholakova. **J. Drug. Deliv. Sci. Tec.**, *43* (2018) 44–49; doi: 10.1016/j.jddst.2017.09.014
14. Micellar Solubilization of Poorly Water-soluble Drugs: Effect of Surfactant and Solubilizate Molecular Structure. Z. Vinarov, V. Katev, D. Radeva, S. Tcholakova, N. Denkov. **Drug. Dev. Ind. Pharm.**, *44* (2018) 677–686 doi: 10.1080/03639045.2017.1408642
15. Solubilisation of Hydrophobic Drugs by Saponins. Z. Vinarov, D. Radeva, V. Katev, S. Tcholakova, N. Denkov. **Ind. J. Pharm. Sci.** *80* (2018) 709–718
16. Efficient Self-Emulsification via Cooling-Heating Cycles. S. Tcholakova, Z. Valkova, D. Cholakova, Z. Vinarov, I. Lesov, N. D. Denkov, K. Smoukov. **Nature Comm.**, *8* (2017) 15012; doi: 10.1038/ncomms15012
17. Mechanism of Lowering Cholesterol Absorption by Calcium Studied by In Vitro Digestion Model. L. Vinarova, Z. Vinarov, S. Tcholakova, N. D. Denkov, S. Stoyanov, A. Lips. **Food & Function** *7* (2016) 151–163.
18. Improving Ibuprofen Solubility by Surfactant-Facilitated Self-Assembly into Mixed Micelles. K. Stoyanova, Z. Vinarov, S. Tcholakova. **J. Drug. Deliv. Sci. Tec.** *36* (2016) 208–215.
19. Lowering of Cholesterol Bioaccessibility and Serum Concentrations by Saponins: in Vitro and in Vivo Studies. L. Vinarova, Z. Vinarov, V. Atanasov, I. Pantcheva, S. Tcholakova, N. Denkov, S. Stoyanov. **Food & Function** *6* (2015) 501–512.
20. Mechanisms of Cholesterol and Saturated Fatty Acid Lowering by Quillaja saponaria Extract, Studied by in vitro Digestion Model. L. Vinarova, Z. Vinarov, B. Damyanova, S. Tcholakova, N. Denkov, S. Stoyanov. **Food & Function** *6* (2015) 1319–1330.
21. Effects of Emulsifier Charge and Concentration on Pancreatic Lipolysis. 1. In the Absence of Bile Salts. Z. Vinarov, Y. Petkova, S. Tcholakova, N. Denkov, S. Stoyanov, E. Pelan, A. Lips, **Langmuir** *28* (2012) 8127–8139.
22. Effects of Emulsifier Charge and Concentration on Pancreatic Lipolysis: 2. Interplay of Emulsifiers and Biles. Z. Vinarov, S. Tcholakova, B. Damyanova, Y. Atanasov, N. Denkov, S. Stoyanov, E. Pelan, A. Lips, **Langmuir** *28* (2012) 12140–12150. **\*Journal Cover**
23. In vitro study of triglyceride lipolysis and phase distribution of the reaction products and cholesterol: effects of calcium and bicarbonate. Z. Vinarov, L. Petrova, S. Tcholakova, N. Denkov, S. Stoyanov, A. Lips, **Food & Function** *3* (2012) 1206–1220.

**Popular science articles:**

1. Role of calcium in the battle against "bad" cholesterol. Z. Vinarov, **BBC Knowledge** (Bulgaria) (2012) 36 64-69. [in Bulgarian]
2. Ice cream: A delicious mix of crystals, droplets and bubbles. Z. Vinarov, **BBC Knowledge** (Bulgaria), 43 (2013) 28-33. [in Bulgarian]