

# SEVCAN ERŞAN, PHD

Interdisciplinary Researcher in Sustainable Food Systems  
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## EDUCATION

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<b>PhD   Biotechnology</b> , Yeditepe University, Istanbul, Türkiye	Mar 2011–Oct 2017
<b>MSc   Food Engineering</b> , Istanbul Technical University (ITU), Istanbul, Türkiye	Sep 2008–Feb 2011
<b>BSc   Food Engineering</b> , ITU, Istanbul, Türkiye	Sep 2003–Jun 2008
<b>Study Abroad   Food Science &amp; Nutrition</b> , Ghent University, Ghent, Belgium	Aug 2006–Jun 2007

## RESEARCH EXPERIENCE

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<b>University of California, Los Angeles (UCLA), Los Angeles, CA</b> Postdoctoral Researcher   Metabolomics <i>Advisor</i> : Prof. Junyoung O. Park, Department of Chemical and Biomolecular Engineering	Mar 2020–Jan 2023
<b>University of Hohenheim, Stuttgart, Germany</b> Postdoctoral & Visiting PhD Researcher   Plant Foodstuff Chemistry <i>Advisor</i> : Prof. em. Reinhold Carle, Chair of Plant Foodstuff Technology & Analysis	Sep 2015–Feb 2019
<b>Yeditepe University, Istanbul, Türkiye</b> PhD Researcher   Food Systems Research Group <i>Advisor</i> : Prof. Özlem Güçlü Üstündağ, Department of Food Engineering	Mar 2011–Aug 2015
<b>ITU, Istanbul, Türkiye</b> Undergraduate & MSc Researcher   Functional Foods Research Group <i>Advisors</i> : Prof. Gürbüz Güneş & Prof. Beraat Özçelik, Department of Food Engineering	Sep 2007–Feb 2011

## PUBLICATIONS

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### Peer-Reviewed Research Articles

- Erşan S**, Chen Y, Park JO. **2025**. Comprehensive profiling of folates across polyglutamylated and one-carbon states. *Metabolomics*, 21, 71.
- Guan X, **Erşan S**, Xie Y, Park JO, Liu C. **2024**. Steady redox and energy homeostasis enabled by photocatalytic material-microbial interfaces. *ACS nano* 18, 20567-20575.
- Xie Y, **Erşan S**, Guan X, Wang J, Sha J, Xu S, Wohlschlegel J. A, Park JO, Liu C. **2023**. Unexpected metabolic rewiring of CO<sub>2</sub> fixation in H<sub>2</sub>-mediated materials-biology hybrids. *Proceedings of the National Academy of Sciences* 120, e2308373120.
- Ozturk A, Steingass CB, Schweiggert R, Carle R, Yemis O, **Erşan S**. **2023**. Ultrasound-assisted extraction and (U)HPLC-DAD-ESI-MS<sup>n</sup> analysis of phenolic compounds from black chokeberries cultivated in Turkey. *Journal of Applied Botany and Food Quality* 96, 21-29.

5. Guan X, **Erşan S**, Hu X, Atallah TL, Xie Y, Lu S, Cao B, Sun J, Wu K, Huang Y, Duan Y, Caram JR, Park JO, Liu C. **2022**. Maximizing light-driven CO<sub>2</sub> and N<sub>2</sub> fixations in biology-material hybrids. *Nature Catalysis* 5, 1019-1029.
6. **Erşan S**, Müller M, Reuter L, Carle R, Müller-Maatsch J. **2022**. Co-pigmentation of strawberry anthocyanins with phenolic compounds from rooibos. *Food Chemistry: Molecular Sciences* 4, 100097.
7. **Erşan S**<sup>†</sup>, Berning JC<sup>†</sup>, Esquivel P, Jimenez VM, Carle R, May B, Schweiggert RM, Steingass CB. **2020**. Phytochemical and mineral composition of fruit and seeds of wild-growing *Bactris guineensis* (L.) H.E. Moore palms from Costa Rica. *Journal of Food Composition and Analysis* 94, 103611. (†indicates equal contributions).
8. Wen X, **Erşan S**, Li M, Wang K, Steingass CB, Schweiggert RM, Ni Y, Carle R. **2019**. Physicochemical characteristics and phytochemical profiles of yellow and red *Physalis* (*Physalis alkekengi* L. and *P. pubescens* L.) fruits cultivated in China. *Food Research International* 120, 389-398.
9. **Erşan S**, Guclu-Ustundag Ö, Carle R, Schweiggert R. **2018**. Subcritical water extraction of phenolic and antioxidant constituents from pistachio (*Pistacia vera* L.) hull. *Food Chemistry* 253, 46-54.
10. **Erşan S**, Guclu-Ustundag Ö, Carle R, Schweiggert R. **2017**. Determination of pistachio hull phenolics by HPLC-DAD-ESI/MS<sup>n</sup> and UHPLC-PDA-ELSD after ultrasound-assisted extraction. *Journal of Food Composition and Analysis* 62, 103-114.
11. **Erşan S**, Guclu-Ustundag Ö, Carle R, Schweiggert R. **2016**. Identification of phenolic compounds in red and green pistachio (*Pistacia vera* L.) hulls (exo- and mesocarp) by HPLC-DAD-ESI-(HR)-MS<sup>n</sup>. *Journal of Agriculture and Food Chemistry* 64, 5334-44.
12. Guclu-Ustundag O, **Erşan S**, Özcan E, Özcan G, Kayra N, Ekinçi FY. **2016**. Black tea processing waste as a source of antioxidant and antimicrobial phenolic compounds. *European Food Research and Technology* 242, 1523-1532.
13. **Erşan S**, Gultekin-Ozguven M, Berktaş I, Erdem O, Tuna E, Gunes G, Ozcelik B. **2016**. Use of *Bacillus indicus* HU36 as a probiotic culture in set-type recombined non-fat yoghurt production and its effects on quality. *International Journal of Dairy Technology* 69, 81-88.
14. Erdem Ö, Gültekin-Özguven M, Berktaş I, **Erşan S**, Tuna HE, Karadağ A, Özçelik B, Güneş G, Cutting SM. **2014**. Development of a novel symbiotic dark chocolate enriched with *Bacillus indicus* HU36, maltodextrin and lemon fiber: optimization by response surface methodology. *LWT - Food Science and Technology* 56, 187-193.

#### Peer-Reviewed Review Articles

15. Law RC, Lakhani A, O’Keeffe S, **Erşan S**, Park JO. **2022**. Integrative metabolic flux analysis reveals an indispensable dimension of phenotypes. *Current Opinion in Biotechnology* 75, 102701. (Review)
16. **Erşan S**, Park JO. **2020**. Light-independent biological conversion of CO<sub>2</sub>. *Joule* 4, 1-5. (Commentary)

#### Invited Book Chapters

17. **Erşan S**. **2025**. Recent advances in sample preparation for spectroscopy applications. In: M. Iammarino (Ed.), *Spectrophotometry in Food Analysis: Fundamentals, Applications and Methods*. Elsevier, Amsterdam. ISBN: 9780443301322. (In press, expected May 1, 2026)
18. **Erşan S**. **2024**. Comprehensive analysis of pistachio (*Pistacia vera* L.) hull phenolics by high performance-liquid chromatography-diode array detection-tandem mass spectrometry. In: M. Gouda, X. Li, & Y. He (Eds.), *Plant Chemical Compositions and Bioactivities*. Springer Protocols, Humana New York, NY, pp. 13-38.
19. **Erşan S**, Müller-Maatsch J. **2022**. Carotenoids in Gac fruit aril - Structure and bioaccessibility. In: M. Nguyen & T.C. Kha (Eds.), *Gac Fruit: Advances in Cultivation, Utilization, Health Benefits and Processing Technologies*. CABI Publishing, CAB Int., NY, pp. 25-39.

## AWARDS & FELLOWSHIPS

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<b>BIOPACIFIC MIP Fellow</b> NSF BioPACIFIC Materials Innovation Platform, UCLA / UCSB, CA	Jan–Dec 2021
<b>Scientific Publication Incentives</b> The Scientific and Technological Research Council of Türkiye (TÜBİTAK), Türkiye	2016–2018
<b>EU Erasmus+ Mobility for Traineeship</b> Yeditepe University, Istanbul, Türkiye / University of Hohenheim, Stuttgart, Germany	Oct 2016
<b>International Research Fellowship for PhD Students</b> TÜBİTAK, Türkiye	Apr–Sep 2016
<b>National PhD Scholarship in Priority Fields in Science &amp; Technology</b> TÜBİTAK, Türkiye	Sep 2014–Aug 2017
<b>Conference Attendance Grants</b> Yeditepe University, Istanbul, Türkiye	2011–2014
<b>Graduate Scholarship</b> Yeditepe University, Istanbul, Türkiye	Apr 2011–Sep 2017
<b>Graduate Education Scholarship</b> Yasar Education and Foundation, İzmir, Türkiye	Sep 2008–Jun 2009
<b>EU Erasmus+ Exchange Program Study Grant</b> Istanbul Technical University, Istanbul, Türkiye / Ghent University, Ghent, Belgium	Aug 2006–Jun 2007

## TEACHING & SUPERVISORY EXPERIENCE

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<b>Guest Lecturer &amp; Laboratory Teaching Assistant</b> Chair of Plant Foodstuff Technology and Analysis, University of Hohenheim Analysis & Quality Assurance in Food Production	Oct 2018
<b>Teaching Assistant</b> Department of Food Engineering, Yeditepe University Food Analysis Lab Food Microbiology Lab Food Engineering Unit Operations I – Fluid Mechanics Food Engineering Unit Operations II – Heat & Mass Transfer	Mar 2011–Oct 2014
<b>Mentorship</b> Tanya Lee – UCLA, Bioengineering Samantha O’Keeffe – UCLA, Chemical Engineering Sung Gyung Lee – UCLA, Chemical Engineering	Sep 2022–Feb 2023 Jun–Aug 2021 Jun–Jul 2021

Aysun Öztürk – University of Hohenheim, Visiting PhD Researcher	Jan–Jun 2018
Jessica Filla – University of Hohenheim, Food Science & Biotechnology	Apr–Jul 2017
Sandra Pottgüter – University of Hohenheim, MS in Food Science & Engineering	Apr 2016–Jun 2017
Firuze Durukan – Yeditepe University, Food Engineering	Jan–Jun 2015

## PROFESSIONAL & ACADEMIC SERVICES

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### Peer, Abstract & Proposal Reviewer

Conducted 40+ peer-reviews for Science Direct, ACS, Springer and MDPI journals	2017–Present
Abstract reviewer for Institute of Food Technologists (IFT) FIRST Annual Event	2022
Proposal reviewer for EU country funding programs	2017–2019

### Professional Memberships

American Institute of Chemical Engineers (AIChE)	2024–Present
Institute of Food Technologists (IFT)	2020–Present

### Outreach

Volunteer, MATHCOUNTS US Middle School Competition, San Bernardino	2024–Present
Outreach Assistant for Prospective Students, Yeditepe University, Istanbul, Türkiye	Feb 2011–Oct 2014

## PROFESSIONAL EXPERIENCE

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<b>EU Research Projects Intern</b> ITU EU Research Office, Istanbul, Türkiye	Aug 2009–Feb 2010
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<b>Food Regulation &amp; Trade Compliance Intern</b> All Food Foreign Traders Association, Istanbul, Türkiye	Jun–Jul 2009
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<b>Food Production Intern</b> Piyale Pasta Production Factory, GIDASA Inc., Sakarya, Türkiye	Jul–Aug 2007
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<b>Food Quality Control Laboratory Intern</b> Kalite System Lab Group (now Mérieux NutriSciences Turkey), Istanbul, Türkiye	Jun–Jul 2006
Military Food Quality Control Laboratories, Istanbul, Türkiye	Jun–Jul 2005

## PRESENTATIONS & CONFERENCE PROCEEDINGS

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- **Ersan S.** *Developing bio-based solutions for harnessing natural resources.* Poster presented at the American Institute of Chemical Engineers Annual Meeting; **2024** Oct. 27; San Diego, CA.
- **Erşan S.** *Plant (secondary) metabolites: Challenges on analysis and opportunities for food applications and improving human health.* Talk to the Park Lab research group in the Department of Chemical and Biomolecular Engineering at UCLA; **2020** March; Los Angeles, CA.
- **Erşan S.** *Utilization of pistachio hull for the recovery of phenolic antioxidants.* Invited talk for Food Waste Recovery Workshop at the ISEKI-Food Conference; **2018** Feb. 6; Stuttgart, Germany.

- **Erşan S.** *Pistachio processing by-product as a source of phenolic compounds.* Talk for Workshop for PhD Students at WALA Heilmittel GmbH; **2016** Aug. 8; Stuttgart, Germany.
- **Erşan S.** *Antioxidant capacity measurement.* Guest presenter for BTEC 528 Processing of Bioactive Extracts from Natural Materials at Yeditepe University; **2013** Dec; Istanbul, Türkiye.
- **Erşan S,** Ozcan E, Ekinci FY, Guclu Ustundag O. *Antioxidant capacity, total phenolic content and antimicrobial activity of black tea processing waste as affected by extraction solvent.* Poster presented at Eurofoodchem XVII; **2013** May 7-10; Istanbul, Türkiye.
- **Erşan S,** Guclu Ustundag O. *Value added utilization of black tea factory waste: Antioxidant activity and phenolic content.* Talk for FABE 2013 International Conference on Food and Biosystems Engineering; **2013** May 30-June 2; Skiathos, Greece. **Published in Proceedings:** Petrotos, K., Filistas, A. (Eds.), Vol. 1, pp. 207–214.
- **Erşan S,** Ozcan E, Ekinci Y, Guclu Ustundag O. *Black tea waste as a source of bioactive phenolic compounds: Antioxidant capacity, antibacterial activity, and anticancer effect.* Poster presented at the 6th ISANH Congress on Polyphenols Applications: Paris Polyphenols, **2012** June 7-8; Paris, France.
- **Erşan S,** Gultekin-Ozguven M, Tuna E, Davarci F, Gunes G, Ozcelik B. *Viability of potentially probiotic culture Bacillus indicus HU36 in yoghurt supplemented with prebiotics, and its effects on physical properties.* Poster presented at Novel Approaches in Food Industry, International Food Congress; **2011** May 26-29; Çeşme, İzmir, Türkiye.
- **Erşan S,** Gunes G, Zor AO. *Respiration rate of pomegranate arils as affected by O<sub>2</sub> and CO<sub>2</sub>, and design of modified atmosphere packaging.* **Published in Proceedings:** Acta Horticulturae, **2009**, 876, 189–196.

### Contributions to Proceedings

- Kayra N, Ozan G, Ozcan E, **Erşan S,** Ekinci FY, Guclu-Ustundag O. *Subcritical water extraction of phenolic compounds from black tea processing waste.* Proceedings of 14th European Meeting on Supercritical Fluids; **2014** May 18-21; Marseille, France; Vol. 94, International Society of Advancement of Supercritical Fluids, ISBN: 978-2-37111-002-1.
- Guclu Ustundag O, Guclu U, **Erşan S.** *Predictive modeling of subcritical water solubility with artificial neural networks.* Proceedings of the 10th Conference on Supercritical Fluids and their Applications; **2013** April 29-May. 6; Naples, Italy; Eds. E. Reverchon, I. De Marco, pp. 387-392.
- Guclu-Ustundag O, Guclu U, **Erşan S.** *Application of artificial neural networks for the modeling of lipid solubility in supercritical carbon dioxide.* Proceedings of 10th International Symposium on Supercritical Fluids; **2012** May; CA.
- Ozcelik B, Karadag A, **Ersan S.** *Bioencapsulation of beta-carotene in three different methods.* Proceedings of the XVIIth International Conference on Bioencapsulation; **2009** Sept. 24-26; Groningen, the Netherlands; pp. 24-26.