

Curriculum vitae (C.V)

ZAHRA SOURI

ASSISTANT PROFESSOR

DEPARTMENT OF BIOLOGY

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EDUCATION

B.S. in biology, Razi university, Kermanshah, Iran, 2005-2009.

M.Sc. in plant physiology, Razi university, Kermanshah, Iran, 2010-2013.

Ph.D in plant physiology, Razi university, Kermanshah, Iran, 2013-2018.

HONORS AND AWARDS

Outstanding Graduate Student (M.Sc.) Award, Razi University, Kermanshah, Iran, 2013.

Distinguished researcher (Ph. D student) at Razi University, Kermanshah, Iran, 2015.

ACADEMIC AND RESEARCH EXPERIENCE

Used to work as Guest researcher at Wageningen University, Netherlands, 2017.

RESEARCH INTEREST

- Plant physiology
- Abiotic stress
- Heavy metal stress
- Hyper-accumulator plants
- Nanotechnology
- Hydroponic systems

PUBLICATIONS

PAPERES

- 1- Karimi N, **Souri Z**. 2013. Metabolic adaptations to arsenic-induced oxidative stress in *Isatis cappadocica*. Iranian Journal of Plant Physiology, 3 (4), 785-792.
- 2- Karimi N, **Souri Z**. 2013. Effect of different arsenic and phosphorus concentrations on osmolytes contents of *Isatis cappadocica*. Plant Process and Function, 2, 5.
- 3- Karimi N, **Souri Z**. 2014. Evaluation of different levels of arsenic and phosphorus on antioxidant compounds content in *Isatis cappadocica*. Iranian journal of plant biology, 6, 21.
- 4- Karimi N, **Souri Z**. 2015. Evaluation the effect of different arsenic and phosphorus levels on chlorophyll and malondialdehyde content of *Isatis cappadocica*. Plant Process and Function, 4, 11.
- 5- Karimi N, **Souri Z**. 2015. Effect of phosphorus on arsenic accumulation and detoxification in Arsenic Hyperaccumulator, *Isatis cappadocica*. Journal of Plant Growth Regulation, 34, 88-95. DOI: 10.1007/s00344-014-9445-x.
- 6- Karimi N, **Souri Z**. 2016. Antioxidant enzymes and compounds complement each other during arsenic detoxification in shoots of *Isatis cappadocica* Desv. Chemistry and Ecology, 32(10), 937-951. DOI: 10.1080/02757540.2016.1236087.
- 7- **Souri Z**, Karimi N, Sarmadi M, Rostami E. 2017. Salicylic acid nanoparticles (SANPs) improve growth and phytoremediation efficiency of *Isatis cappadocica* Desv., under As stress. IET Nanobiotechnology, 11(6): 650–655. DOI: 10.1049/iet-nbt.2016.0202.
- 8- **Souri Z**, Karimi N. 2017. Enhanced Phytoextraction by As Hyperaccumulator *Isatis cappadocica* Spiked with Sodium Nitroprusside. Soil and Sediment Contamination: An International Journal. 26 (4): 457-468. DOI: 10.1080/15320383.2017.1326457.
- 9- **Souri Z**, Karimi N, Luisa M. Sandalio. 2017. Arsenic Hyperaccumulation Strategies: An Overview. Frontiers in Cell and Developmental Biology. 5, 67. DOI: 10.3389/fcell.2017.00067.

- 10- **Souri Z**, Karimi N, de Oliveira L.M. 2018. Antioxidant enzymes responses in shoots of arsenic hyperaccumulator, *Isatis cappadocica* Desv., under interaction of arsenate and phosphate. *Environmental Technology*, 39(10):1316-1327. DOI: 10.1080/09593330.2017.1329349.
- 11- **Souri Z**, Karimi N. 2018. Interactive of arsenate and phosphate on arsenic-induced oxidative stress in root of *Isatis cappadocica* Desv. *Plant Process and Function*, 7, 25.
- 12- Farooq M.A, Niazi A, Akhtar J, Saif Ullah, **Souri Z**, Karimi N, Zed Rengel. 2019. Acquiring Control: The Evolution of ROS-Induced Oxidative Stress and Redox Signaling Pathways in Plant Stress Responses. *Plant Physiology and Biochemistry*. 141, 353-369. DOI: 10.1016/j.plaphy.2019.04.039.
- 13- Karimi N, **Souri Z**, Vakili F, Farooq MA, Javaid Akhtar J. 2019. The role of selenium on mitigating arsenic accumulation, enhancing growth and antioxidant responses in metalicolous and non-metalicolous population of *Isatis cappadocica* Desv. and *Brassica oleracea* L. *Environmental Science and Pollution Research*. 26(21), 21704-21716. DOI: 10.1007/s11356-019-05392-8.
- 14- **Souri Z**, Karimi N, Farooq MA, Luisa M. Sandalio. 2020. Nitric oxide improves tolerance to arsenic stress in *Isatis cappadocica* Desv. shoots by enhancing antioxidant defenses. *Chemosphere*. 239, 124523. DOI: 10.1016/j.chemosphere.2019.124523.
- 15- **Souri Z**, Karimi N. 2021. The effect of arsenic and sodium nitroprusside on the physiological responses and antioxidant enzymes activity of *Isatis cappadocica*. *Journal of Plant Process and Function*. 10 (41): 187-208.
- 16- **Souri Z**, Khanna K, Karimi N, Ahmad P. 2021. Silicon and Plants: Current Knowledge and Future Prospects. *Journal of Plant Growth Regulation*. 40: 906-925. DOI: 10.1007/s00344-020-10172-7.
- 17- **Souri Z**, Karimi N, Norouzi L, Ma X. 2021. Elucidating the physiological mechanisms underlying enhanced arsenic hyperaccumulation by glutathione modified superparamagnetic iron oxide nanoparticles in *Isatis cappadocica*. *Ecotoxicology and Environmental Safety*. 206: 111336. DOI: 10.1016/j.ecoenv.2020.111336.

- 18- **Souri Z**, Karimi N, Farooq M.A, da Silva Lobato AK. 2021. Improved physiological defense responses by application of sodium nitroprusside (SNP) in *Isatis cappadocica* Desv. under cadmium stress. *Physiologia Plantarum*. 173:100-115. DOI: 10.1111/ppl.13226.
- 19- **Souri Z**, Karimi N, Norouzi L, Ma X. 2021. The effect of NADPH oxidase inhibitor diphenyleneiodonium (DPI) and glutathione (GSH) on *Isatis cappadocica*, under Arsenic (As) toxicity. *International Journal of Phytoremediation*. 23 (9): 945-957). DOI:10.1080/15226514.2020.1870435.
- 20- Khademi Azam S, Karimi N, **Souri Z**, Vaculík M. 2021. Multiple effects of silicon on alleviation of arsenic and cadmium toxicity in hyperaccumulator *Isatis cappadocica* Desv. *Plant Physiology and Biochemistry*.168:177-187. DOI:10.1016/j.plaphy.2021.09.027.
- 21- Arianmehr M, Karimi N, **Souri Z**. 2022. Exogenous supplementation of Sulfur (S) and Reduced Glutathione (GSH) Alleviates Arsenic Toxicity in Shoots of *Isatis cappadocica* Desv and *Erysimum allionii* L. *Environ Sci Pollut Res Int*. doi: 10.1007/s11356-022-19477-4.
- 22- **Souri Z**, Farooq M.A, Karimi N. 2023. Editorial: Silicon and heavy metal stress in plants: current knowledge and future prospects. *Front. Plant Sci*. 14:1227863. doi: 10.3389/fpls.2023.1227863.
- 23- Karimi N, Mortezaazadeh A, **Souri, Z**. et al. 2024. Silicon Application Alleviates Arsenic Toxicity in *Isatis* (*Isatis cappadocica* Desv.) by Modulating Key Biochemical Attributes and Antioxidant Defense Systems. *J Plant Growth Regul* 43, 219–230. <https://doi.org/10.1007/s00344-023-11079-9>.
- 24- Karimi N, Khademi Azam S, **Souri Z**. 2024. Investigating the effect of silicon on the growth and some physiological parameters of *Brassica napus* L. under arsenic and cadmium stress. *JOURNAL OF PLANT ENVIRONMENTAL PHYSIOLOGY*. 19 (75), 1-20.
- 25- Soheili M, Karimi N, **Souri Z**. et al. 2025. Mitigation of Nickel Stress-Induced Toxicity in *Odontarrhena inflatum* and *Erysimum cheiri* by Modulating Ion Homeostasis and Antioxidant Defense System. *J Plant Growth Regul* 44, 2425–2444. <https://doi.org/10.1007/s00344-024-11557-8>.

- 26- Karimi N, Pakdel H, **Souri Z**, Norouzi L. et al. 2025. Effects of phytostabilized Zinc Sulfide nanocomposites on growth and Arsenic accumulation in Wheat (*Triticum aestivum* L.) under Arsenic stress. *Plant Stress*. 16, 100886.
<https://doi.org/10.1016/j.stress.2025.100886>

CONFERENCES

- 1- **Souri Z**, Karimi N. 2012. Effects of arsenic and phosphorus interaction on their accumulation and some physiological parameters in an arsenic-hyperaccumulator *Isatis cappadocica*. 17th National and 5th International Iranian Biology Conference.
- 2- **Souri Z**, Karimi N. 2012. The study of arsenic and phosphorus interaction on some biochemical parameters of arsenic-hyperaccumulator, *Isatis cappadocica*. 3th annual conference of Razi University.
- 3- **Souri Z**, Karimi N. 2013. The effect of different arsenic and phosphorus concentration on anthocyanin contents of *Isatis cappadocica*. 4th annual conference of Razi University.
- 4- Emamiyan Abadeh T, Karimi N, Ghasempour H.R, **Souri Z**. 2014. Effect of different concentrations of chromium on photosynthetic efficiency and phytoremediation by *Ceratophyllum demersum* L. 3th Iranian Conference of Plant Physiology.
- 5- **Souri Z**, Karimi N. 2014. Evaluation of different levels arsenic and phosphorus on peroxidase enzyme activity in *Isatis cappadocica*. 18th National and 6 th International Congress of Biology in Iran.
- 6- **Souri Z**, Karimi N, Sarmadi M, Rostami E. 2014. The effects of salicylic acid nanoparticle, on growth and photosynthetic pigments of *Isatis cappadocica* under arsenic stress. 18th National and 6 th International Congress of Biology in Iran, (Presentation).
- 7- **Souri Z**, Karimi N, Sarmadi M, Rostami E. 2015. The using of nanotechnology for enhancement biomass of *Isatis cappadocica*. 1th International and 9th National Biotechnology Congress.
- 8- **Souri Z**, Karimi N. 2015. The impact of different levels arsenic and phosphorus on phytoremediation efficiency of *Isatis cappadocica*. 1th International and 9th National Biotechnology Congress.

- 9- Azimi M.A, Karimi N, Ghasempour H.R, **Souri Z**. 2015. Effect of different concentrations of chromium on efficiency and phytoremediation by wheat (cv. sardari). 3th International Congress of Biology and Ecology.
- 10- Azimi M.A, Karimi N, Ghasempour H.R, **Souri Z**. 2015. The effect of different levels of pH on growth and photosynthetic pigments in wheat (cv. sardari) plants, under chromium toxicity. 4th Iranian Conference of Plant Physiology.
- 11- **Souri Z**, Karimi N. 2016. Investigated the role of nitric oxide on growth of *Isatis cappadocica*, under cadmium stress. 3th international conference on applied research in chemistry and chemical Engineering and biology. (Presentation).
- 12- Karimi N, **Souri Z**, Sarmadi M. 2016. Impact of salicylic acid nanoparticle, on antioxidant responses of *Isatis cappadocica* under arsenic stress. 7th International Congress of Biology.
- 13- **Souri Z**, Karimi N. 2016. Interaction of arsenic and nitric oxide on lipid peroxidation in *Isatis cappadocica*. 7th International Congress of Biology.
- 14- Mortezaazadeh A, Karimi N, **Souri Z**. 2018. The effect of arsenate and arsenite on some growth parameters of *Isatis cappadocica*. 20th national and 8th International Congress of Biology.
- 15- Mortezaazadeh A, Karimi N, **Souri Z**. 2018. The impact of silicon and nano silicon on improving resistance of *Isatis cappadocica* to arsenite. 20th national and 8th International Congress of Biology.
- 16- Esmaeili A, Karimi N, **Souri Z**. 2020. Effect of malic and citric acids on growth and photosynthetic pigment content of *Isatis cappadocica*, under chromium stress. 2nd International conference on Biology and Earth Sciences.
- 17- Karimi N, **Souri Z**, 2021. Application of nanotechnology in heavy metal remediation by plants. 7th Iranian Conference of Plant Physiology.

- 18- Karimi N, **Souri Z**, 2022. Increasing the efficiency of phytoremediation using nanoparticles (Nano-phytoremediation). 22nd National and 10th International Congress on Biology (Presentation).
- 19- **Souri Z**, Karimi N, 2022. Improvement of heavy metals stress in plants by gaso-transmitters. 22nd National and 10th International Congress on Biology (Presentation).
- 20- **Souri Z**, 2023. Biosynthesis of phenolic compounds in plants. The first international conference on the biology of medicinal plants.
- 21- Zahra Derekeh, **Zahra Souri**, 2024. Effect of Chromium on Protein Content and Antioxidant Enzyme Activities in the shoot of Quinoa. The 30th national and the 5th international iranian food sciences and technology congress.
- 22- Zahra Derekeh, **Zahra Souri**, 2024. Nano-priming as an innovative seed-priming methodology for abiotic stress tolerance in crops. Seed 2024 (Medicinal Plants, Crop, Horticulture, Pasture and Forest).
- 23- Fateme Ranjbari, **Zahra Souri**, 2024. Investigating the effect of nanoparticles containing zinc and thiourea on the germination of *Brassica napus* under arsenic stress. The 23rd National Congress and the 11th International Congress of Iranian Biology.
- 24- Fateme Ranjbari, **Zahra Souri**, 2025. Green synthesis of zinc-sulfur nanocomposite (nZn-S) and investigation of its effect on rapeseed plant growth under arsenic stress conditions. The 3th International Conference and the 4th National Conference on Agriculture, Environment and Food Security.

BOOK CHAPTERS

- 1- **Souri Z**, Karimi N, Farooq M.A, Akhtar J. 2019. Phytohormonal signaling under abiotic stress, In “Plant Life under Changing Environment”. Published by Elsevier. DOI: 10.1016/B978-0-12-818204-8.00019-9.

- 2- **Souri Z**, Cardoso A.A, da-Silva C.J, de Oliveira L.M, Dari B, Sihi D, Karimi N. 2019. Heavy metals and photosynthesis: Recent Developments. In “Photosynthesis, Productivity, and Environmental Stress”. Published by John Wiley & Sons. DOI: 10.1002/9781119501800.ch7.
- 3- **Souri Z**, Sharifan H, de Oliveira L.M, Ngatia L. 2022. Arsenic removal by phytoremediation techniques, In “Arsenic in Plants: Uptake, Consequences and Remediation Techniques”. Published by John Wiley & Sons. DOI: 10.1002/9781119791461.ch14
- 4- Khan EA, **Souri Z**, Gaytán VG. 2022. Polyamine Metabolism and Ethylene Signaling in Plants, In “Ethylene in Plant Biology”. Published by John Wiley & Sons. DOI: 10.1002/9781119744719.ch20.

RESEARCH PLANS

- 1- Improvement the phytoremediation ability of *Isatis cappadocica* through the superparamagnetic iron oxide nanoparticles (Fe_3O_4 @GSH). Iran National Science Foundation (2019), Grant No, 97026162.

SKILLS AND EXPERIENCE

- Phytoremediation
- Hydroponic culture
- Statistical Data Analysis
- Microsoft office

OTHER

Language: Persian, English