

**Nilsun H. Ince****Program Area :** Environmental Technology**Address :** Bogazici University, Institute of Environmental Sciences, 34342, Bebek, Istanbul, Turkey**E-mail :** ince@boun.edu.tr**Telephone :** (212) 359-7038**Professional Registration :** Prof.**Areas of Interest:**

- Physicochemical processes in water and wastewater treatment
- Ultrasonication as an advanced water treatment technology
- Advanced Oxidation Processes (AOPs)
- Water decontamination from micropollutants
- Analysis and elimination of emerging contaminants in water
- Decolorization of textile process effluents by AOPs
- Pre-treatability of endocrine disruptors and pharmaceuticals by ultrasound-assisted advanced oxidation and coagulation
- Synthesis and use of metallic nanoparticles in water treatment

**Academic Career:**

- Professor, BÜ, Institute of Environmental Sciences, 1997
- Associate Professor, BÜ, Institute of Environmental Sciences, 1991
- Assistant Professor, BÜ, Institute of Environmental Sciences, 1990

**Courses Taught:**

- ESC 501 Introduction to Environmental Sciences
- ESC 507 New Concepts in Environmental Engineering
- ESC 514 Water Quality Management
- ESC 516 Water and Wastewater Treatment: Physicochemical Processes
- ESC 566 Fundamentals of Environmental Engineering
- ESC 579 Graduate Seminar
- ESC 601 Ph.D. Seminar
- ESC 614 Advanced Technologies for Refractory Matter Removal in Water and Effluent Systems
- ESC 689 Special Topics in Environmental Technology: Advanced Oxidation Processes for Water Pollution Control

**Selected Research Projects:**

- Pharmaceutical Removal in Drinking Water by Conventional and Advanced Oxidation Processes, BAP, 2012.
- Integration of Advanced Oxidation and Nanoparticle Technologies for

- Removing Analgesics and Anti-inflammatory Pharmaceuticals, BAP, 2010.
- Pretreatment of Biocide Containing Wastewater by Advanced Oxidation Techniques, BAP, 2008.
- Ultrasonic Pretreatment of Domestic Wastewater Sludge, Technical University Hamburg, Department of Sanitary and Environmental Engineering, 2007.
- Optimization of Process Parameters for Ultrasonic Degradation of Endocrine Disruptors in Water, BAP, 2007.
- Elimination of Micropollutants using Ultrasound and Combined Processes: TUBITAK İÇTAG-Ç098/PIA, 103I049, 2004
- Disinfection with Ultrasound, BAP, 2004
- Chemistry in High Energy Microenvironments: EU COST Action D32, 2011.
- Decolorization of Textile Dyebath Effluents by Advanced Oxidation Processes and Modeling of OH Radical Reactions, DPT, 1998.
- A Battery Approach to Toxicity Assessment of Heavy Metals in Binary Solutions, BU Research Fund, 1996

### Publications in peer-reviewed journals:

1. Ziylan A., Agopcan S., Kidak R, Aviye V. And Ince NH. Sonochemical degradation of Diclofenac: byproduct assessment, reaction mechanisms and environmental considerations. *Environ. Sci. Poll. Res.* (2014) 1-11.  
[0.1007/s11356-014-2514-7](https://doi.org/10.1007/s11356-014-2514-7)
2. Ziylan A., Ince NH. Catalytic ozonation of ibuprofen with ultrasound and Fe-based catalysts. *Catalysis Today.* (in press).
3. Ziylan A., Ince N.H., Ozonation-based advanced oxidation for pre-treatment of water with residuals of anti-inflammatory medication. *Chemical Engineering Journal* 220 (2013) 151-160.
4. Savun B., Neis U., Ince N.H. Pretreatment of sewage sludge by low-frequency ultrasound, *Journal of Advanced Oxidation Technologies*, 15, 2, 2012.
5. Ersenkal D., Ziylan A., Ince N. H., Acar, HY, Demirer, M , Copty, N.K., 2011: Impact of dilution on the transport of poly(acrylic acid) supported magnetite nano-particles in porous media, *J Contam. Hydrology*, 126 ,3-4, 248-257.
6. Ziylan A., Ince N.H., 2011: The occurrence and fate of anti-inflammatory and analgesic pharmaceuticals in sewage and fresh water: treatability by conventional and non-conventional processes, *J. Haz. Mat.*, 187, 1-3, 24-36.
7. Güyer-Tezcanli G., Ince Nilsun H., 2011: Degradation of diclofenac in water by homogeneous and heterogeneous Sonolysis, *Ultrason.Sonochem.* 18, 1, 114-119.
8. Eren Z., Ince N. H.; Acar F. N., 2010: Degradation of textile dyes, dyebaths and dyeing wastewater by homogeneous and heterogeneous sonophotolysis, *J.Advanced Oxid.Technol.* 13, 2, 206-211.
9. Eren Z., Ince N.H., 2010: Sonolytic and sonocatalytic degradation of azo dyes by low and high frequency ultrasound, *J. Haz. Mat.* 177, 1-3, 1019-1024.
10. Eren Z., Acar F. N., Ince N. H., 2010: Fenton and Fenton-like oxidation of C.I Basic Yellow 51: a comparative study, *Coloration Technology*, 126, 6, 337-34.
11. Ince N.H., Gültekin I., Tezcanlı-Güyer G., 2009: Sonochemical destruction of nonylphenol: effects of pH and hydroxyl radical scavengers, *J. Haz. Mat.* 172, 2-3, 739-743.
12. Gültekin I., Mavrov V., Ince N. H., 2009: Degradation of bisphenol-A by ozonation, *J.Advanced Oxid.Technol.*12, 2, 242-248.

13. Chand R., Ince N.H.; Gogate P. R., Bremner, D.H., 2009: Phenol degradation using 20, 300 and 520 kHz ultrasonic reactors with hydrogen peroxide, ozone and zero valent metals, *Sep. Purific. Technol.* **67**, 1, 103-109.
14. Gültekin I., Tezcanli-Güyer G., Ince N. H., 2009: Sonochemical Decay of Cl Acid Orange 8: effects of CCl<sub>4</sub> and t-butyl alcohol, *Ultson.Sonochem.* **16**, 4, 577-581.
15. Gültekin I., Tezcanli-Güyer G., Ince N. H., 2009: Degradation of 4-n-nonylphenol in water by 20 kHz ultrasound, *J.Advanced Oxid.Technol.* **12**, 105-110.
16. Kıdak R., Ince N. H., 2008: A novel adsorption/saturation approach to ultrasonic degradation of phenol, *J.Advanced Oxid.Technol.* **11**, 3, 583-587.
17. Gültekin I., Ince N.H., 2008: Ultrasonic destruction of bisphenol-A: the operating parameters, *Ultrasonics Sonochemistry*, **15**, 524-529.
18. Gültekin I., Ince N.H., 2007: Synthetic endocrine disruptors in the environment and water remediation by advanced oxidation processes, *J. Environ. Management*, **85**, 816-832.
19. Kıdak R., Ince N.H., 2007: Catalysis of advanced oxidation reactions by ultrasound: a case study with phenol, *J. Haz. Mat.* **146**, 630-635.
20. Gültekin I., Ince N.H., 2006: Degradation of aryl-azo-naphthol dyes by ultrasound, ozone and their combination: effect of  $\alpha$ -substituents, *Ultson.Sonochem.* **13**, 208-214.
21. Kıdak R, Ince N.H., 2006: Ultrasonic destruction of phenol and substituted phenols: a review of current research, *Ultson.Sonochem.* **13**, 190-194.
22. Özen A. S, Aviyente V., Tezcanli-Güyer G, Ince N.H., 2005: Experimental and modeling approach to decolorization of azo dyes by ultrasound: degradation of the hydrazone tautomer, *J. Phys.Chem. A*, **109**, 3506.
23. Apikyan G.I., Ince N.H., 2004: Application of electro-chemical treatment for effluent reuse in textile industry, *Advances in Color Science & Technology*, **7**, 1, 24.
24. Tezcanli-Güyer G., Ince N.H., 2004: Structure-related degradability of textile dyestuff by acoustic cavitation: a study with dyebath effluents, *Advances in Color Science & Technology*, **7**, 2, 36.
25. Ince NH., Tezcanlı-Güyer G., 2004: Impacts of pH and molecular structure on ultrasonic degradation of azo dyes, *Ultrasonics*, **42**, 591-596.
26. Tezcanlı-Güyer G., Ince N.H., 2004: Individual and combined effects of ultrasound, ozone and UV-irradiation: a case study with textile dyes, *Ultrasonics*, **42**, 603-609.
27. Gültekin I., Ince N.H., 2004: Degradation of reactive azo dyes by UV/H<sub>2</sub>O<sub>2</sub>: Impact of radical scavengers, *J. Environ.Sci. Health, Part A*, **39**, 1069.
28. Tezcanli-Güyer G., Alaton I.A., Ince N.H., 2003: Sonochemical destruction of textile dyestuff in wasted dyebaths, *Coloration Technology*, **119**, 292-296.
29. Tezcanli-Güyer G., Ince N.H., 2003: Degradation and toxicity reduction of textile dyestuff by ultrasound, *Ultson.Sonochem.*, **10**, 235-240.
30. Ince N.H., Hassan D., Üstün B., Tezcanlı G., 2002: Combinative dyebath treatment with activated carbon and UV/H<sub>2</sub>O<sub>2</sub>: A case study with Everzol Black-GSP<sup>®</sup>, *Wat.Sci.Technol.* **46**, 4-5, 51-58.
31. Şenyurt N, Aviyente V, Avcı D., Ince N., 2001: A computational approach to polymerizabilities of diallylamines", *J. Mol..Model.* **7**, 257-264.
32. Ince N.H. and Tezcanlı G. 2001: Reactive dyestuff degradation by combined sonolysis and ozonation", *Dyes and Pigments*, **49**, 145-153.

33. Ince N.H. and Belen R. 2001: Aqueous phase disinfection with ultrasound: Process kinetics and the effect of solid catalysts, *Environ.Sci.Technol.* **35**, 1885-1889.
34. Ince N.H., Tezcanli G., Belen R. Apikyan I.G. 2001: Ultrasound as a catalyzer of aqueous reaction systems: the state of the art and environmental applications, *Applied Cat :B: Environmental*, **29**, 167-176.
35. Ince N. H., Apikyan I.G., 2000: Combination of activated carbon adsorption and light-enhanced chemical oxidation with hydrogen peroxide”, *Wat.Res.* **34**, 17, 4169-4176.
36. Ince N.H., Tezcanlı G., 1999: Treatability of textile dyebath effluents by advanced oxidation”, *Wat.Sci.Technol.* **40**, 1, 183-190.
37. Ince, N. H., Dirilgen,N., Apikoglu, I.,Tezcanlı G., Üstün B. 1999: Assessment of toxic Interactions of heavy metals in binary mixtures: a statistical approach, *Arch.Environ.Cont.Toxicol.* **36**, 4, 1080-1084.
38. Ince, N.H. 1999: Critical effect of H<sub>2</sub>O<sub>2</sub> on photochemical dye degradation, *Wat.Res.* **33**, 4, 1080-1084.
39. Ince, N. H. and Erdoğan, G. 1998: Toxicity screening, assessment and reduction in a central wastewater treatment plant, *Wat.Environ.Res.***70**, 1, 170-1178.
40. Ince, N. H.1998: “UV-Enhanced chemical oxidation for tertiary treatment of municipal landfill leachate”, *Wat.Environ.Res.* **70**, 1161-1169.
41. Ince, N. H., Stefan M. I. and Bolton J. R. 1997: UV/H<sub>2</sub>O<sub>2</sub> degradation and toxicity reduction of textile azo dyes: Remazol Black-B, a case Study. *J.Advanced Oxid.Technol.* **2**(3), 442-448.
42. Ince, N.H, and Gonenç, D. 1997: Treatability of textile azo dyes by UV/H<sub>2</sub>O<sub>2</sub> *Environ. Technol.* **18**, 179-185.
43. Ince, N., Yenigun, O., 1995: A critical review of water quality classification system in Turkey: a case Study on Meric Basin”, *Environ.Management*, **19**, 601-607.
44. Dirilgen, N. and Ince, N., 1995: Inhibition effects of the anionic surfactant SDS on duckweed with considerations on growth and accumulation, *Chemosphere*, **31**, 4185-4196.
45. Bekbölet, M., Ince, N., Özkosemen, G., Mutlutürk, G., 1994: Determination of nitrate in drinking water: a statistical approach, *Doğa, Turkish National J. of Chemistry*, **18**, 3, 18 –188.
46. Ince, N. I 993: A theoretical approach to modeling the evaporation rates and half lives of some priority pollutants in two major lakes of Istanbul, *International J. of Environmental Studies*, **40**, 1-9.
47. Ince, N., Inel, Y. 1991: A semi-empirical approach to relate volatilization rates of organic chemicals to their physical properties, *Water Research*, **25**, 8, 903.
48. Ince, N. and Inel, Y., 1989: Volatilization of organic chemicals from water, *Wat. Air.Soil. Pollut.* **47**, 71.

Books: Ince, Nilsun. H. Alternative Bioassay Techniques Suitable for Monitoring Toxicity in the Black Sea Region, Proceedings of the First International Workshop. Boğaziçi University, Istanbul, Turkey, 26-28 April 1995.