



## FACULTY PROFILE

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## EDUCATIONAL BACKGROUND

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1. PhD, Microbiology, Inst. of Biochemistry and Physiology of Microorganisms, Pouschino, Moscow region, Russia (1986)
2. MSc, Biochemistry, Saratov State University, Saratov, Russia (1981)
3. Water and wastewater related courses of the South African Institution of Civil Engineering (SAICE), SA Association of Consulting Engineers (SAACE) and University of Pretoria (1998-2000)

## RESEARCH INTERESTS

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1. Ecological Engineering for climate change adaptation
2. Environmental Impact Assessment and Strategic Environmental Assessment
3. Natural systems (ponds and wetlands) as wastewater treatment systems
4. Microbial aspects of Environmental Engineering
5. Health and Ecological Risk assessment
6. Water Safety Plans
7. Microbial biotechnology and nanotechnology

## TEACHING

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1. ED78.01: Environmental Chemistry and Laboratory, 3(2-3)
2. ED78.16: Applied Microbiology and Laboratory, 3(2-3)
3. ED78.28: Health and Ecological Risk Impact Assessment, 3(3-0)
4. ED78.19: Environmental Impact Assessment, 3(3-0)

## SELECTED PUBLICATIONS

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1. H. Habib, A.J. Anceno, J. Fiddes, J. Beekma, M. Ilyuschenko, V. Nitivattananon, O.V. Shipin 2013. Jumpstarting strategic water resources protection from a changing global perspective: gaps and prospects in Afghanistan. *Journal of Environmental Management*, 129, 244-259.
2. Baruah, S., Cesar Ortinero, C., Shipin, O.V. and Dutta, J. 2012. Manganese doped zinc sulfide quantum dots for detection of *Escherichia coli*. *Journal of Fluorescence, Springer*, 22, 403-408.

3. Noicharoen, D., Parkpian, P., Shipin, O.V., Polprasert, C., DeLaune, R.D. and Kongchum, M. (2012). Effect of salinity on adsorption and desorption of paraquat in Pak Phanang river sediment, Thailand. *Journal of Environmental Science and Health, Part A*, 47, (12), 1897- 1908.
4. D. Noicharoen, P. Parkpian, O. V. Shipin, C. Polprasert, R. D. DeLaune and Manoch Kongchum. 2012. Effect of salinity on adsorption and desorption of paraquat in Pak Phanang river sediment, Thailand. *Journal of Environmental Science and Health, Part A*, 47, 12, 2012, pp. 1897- 1908.
5. S. Afroze, O.Shipin, A. Iqbal. 2011. Dealing with Cumulative Effects (Impacts) in Asian Multi-Functional Wetlands. *Journal of Economics and Sustainable Development*, 2, 4, 54-62 , Publisher: IISTE, International Institute for Science, Technology and Education, USA.
6. C. Thuithaisong, P. Parkpian, O. Shipin, R. Shrestha, K. Naklang, R. DeLaune and A. Jugsujinda 2011. Soil quality indicators for predicting sustainable organic rice production. *Communications in Soil Science and Plant Analysis*, 42, 5, 548-568.
7. A. Tserendorj, A. Anceno, E. Houpt, C. Icenhour, O. Sethabutr, C. Mason, O. Shipin. 2011. Molecular techniques in ecohealth research toolkit: a case of facilitated estimation of aggregate burden of waterborne gastroenteritis in a periurban landscape. *Journal of EcoHealth*, 8, 3, 349-364.
8. A. Sapkota, A. Anceno, S. Baruah, O. Shipin and J. Dutta, 2011. Zinc oxide nanorod mediated visible light photoinactivation of model microbes in water. *Nanotechnology*, 22, 21.
9. P. Kanchana, H. Menzi ,Shipin O. Estimating nutrient flux of an integrated agriculture-aquaculture (IAA) system in peri-urban Thailand. 2010. *International Journal of Environmental and Rural Development*, UN University Publishers, 1-2.
10. B. Channarong, S. H. Lee, R. Bade and O. V. Shipin. · 2010. Simultaneous removal of nickel and zinc from aqueous solution by micellar-enhanced ultrafiltration and activated carbon fiber hybrid process. *Desalination* 262, 221–227.
11. H. Menzi, O.Oenema, C. Burton, O. Shipin, P. Gerber, T. Robinson and G. Franceschini. 2010. Impacts of intensive livestock production and manure management on the environment. Chapter 9. In: *Livestock in a changing landscape. Drivers, consequences, and responses*, Vol.1 (eds, H. Steinfeld, H. Mooney, F. Schneider, L. Neville), Island Press, USA (ISBN 978-1-59726-671-0)
12. C. Thuithaisong, P. Parkpian, O. Shipin, R. Shrestha and K. Naklang. 2010. Comparison of Microbial Diversity of Paddy Soils in Sustainable Organic Farming. *International Journal of Environmental and Rural Development*, 1, 1, 152-157.
13. A. J. Anceno, I. Bonduush, O. V. Shipin and J. Dutta. 2010. Nanoparticle self-assembly via facile (bio)chemistry: charge-stabilized metal nanoparticles on microbial cell surfaces. *Journal of Biotechnology*, 4, 1–6.
14. A.Karazhanova, O.Shipin, M.Ilyushchenko, D.Jiang, S.Sinha, P. Parkpian. 2010. Development of options analysis and prefeasibility study for the long term storage of Mercury in Asia and the Pacific, *UN publication*, United Nations Environment Programme, UNEP  
<http://www.unep.org/hazardoussubstances/Mercury/PrioritiesforAction/SupplyandStorage/Activities/AsiaPacificMercuryStorageProject/>
15. A. Anceno, P. Rousseau, F. Béline, O. Shipin and P. Dabert. Evolution of N-converting bacteria during the start-up of anaerobic digestion coupled biological nitrogen removal pilot-scale bioreactors treating high-strength animal waste slurry. 2010. *Bioresourse Technology*, 100 (14), 3678-87.
16. N. A. Molla, K. A. Mollah, A. Hossain, O. Shipin, H. P. Nur, I. Nimmi and A. Aminul. 2009. Drinking Water Treatment at Home: a Trial in Dhaka, Bangladesh. *Bangladesh Journal of Scientific and Industrial Research*, 44(2), 233-240, 2009.
17. S.Wickramasinghe, M.Borin, S.Kotagama, R.Cochard, A.Anceno and O.Shipin. 2009. Multi-functional pollution mitigation in a rehabilitated mangrove conservation area. *Ecological Engineering*, 35, 898–907
18. M. B.C. Diallo, A. J. Anceno, B. Tawatsupa, N.K. Tripathi, V. Wangsuphachat and O.V. Shipin. 2009. A GIS-based analysis of the fate of waste-related pathogens, *Giardia lamblia*, *Cryptosporidium parvum* and *E.coli* in a tropical canal network. *Journal of Water and Health*, 7, 1, 133–14.
19. P. Laobusnanant, S. H. Lee, A. Anceno, G. Ghosh, Dongjin Kim, B. Pathak and O. Shipin. 2009. N-removal performance and underlying bacterial taxa of upflow filter bioreactor system under different dissolved oxygen and internal recycle conditions. *Bioprocess and Biosystem Engineering*, 32, 6, 809-818.
20. R. Cochard, S.L. Ranamukharachchi, G. Shivakoti, O. Shipin, P.J. Edwards and K.T. Seeland. 2008. The 2004 tsunami in Aceh and Southern Thailand: a review on coastal ecosystems and vulnerability. *Perspectives in Plant Ecology, Evolution and Systematics*, 10, pp. 3-40.
21. T. Clasen, D. H. Thao, S. Boisson and O. Shipin. 2008. Microbiological Effectiveness and Cost of Boiling to Disinfect Drinking Water in Rural Vietnam. *Environmental Science and Technology*, 42, 12, 4255-4260.

22. S. Sukprasert, P. Rattaprasert, Z. Hamzah, O. Shipin and P. Chavalitsheewinkoon-Petmitr. 2008. PCR detection of *Entamoeba spp* from surface and waste water samples using genus-specific primers. *Southeast Asian Journal of Tropical Medicine and Public Health*, 39 (1), 6-9.
23. M. B.C. Diallo, A. J. Anceno, B. Tawatsupa, E. R. Houpt, V.Wangsuphachat and O.V. Shipin. 2008. Infection risk assessment of diarrhea-related pathogens in a tropical canal network. *Journal of Science of Total Environment*, 407, 223-232.
24. A.J. Anceno, M. Ozaki, Y.N.D. Dang, B. Chuluun and O.V. Shipin. 2007. Canal networks as extended waste stabilization ponds: fate of pathogens in constructed waterways in Pathumthani province, Thailand. *Water Science and Technology*, IWA, London, 55(11), 143-156.
25. T. Clasen, T. F. Saeed, S. Boisson, P. Edmondson and O. Shipin. 2007. Sodium dichloroisocyanurate (NaDCC) tablets for routine treatment of drinking water: a randomized, controlled trial to assess microbiological effectiveness in Bangladesh. *American Journal of Tropical Medicine and Hygiene*, 76 (1), 187-192.
26. O.V. Shipin, Seunghwan Lee, C. Chiemchaisri, W. Wiwattanakom, G.C. Ghosh, A.J. Anceno and W. F. Stevens. 2007. Piggery wastewater treatment in a tropical climate: biological and chemical treatment options. *Environmental Technology*, London 28, 329-337.
27. O. Shipin. 2007. Multifunctional wetlands for biodiversity conservation and landscape beneficiation: An Asian perspective. *International Conference on Multiple Roles of Wetlands 26-29 June 2007 University of Padua, Padova/Venice, Italy* (Keynote lecture).
28. O.Shipin. 2006. Environmental Impact Assessment, Environmental Auditing and Strategic Environmental Assessment. In: Environmental Management tools. A Training Manual (ed.J.K. Routray), ISBN 978-974-8257-43-3, UNEP and SERD (AIT), pp.83-96.
29. A. Anceno, H. Katayama, E. Houpt, P. C. Petmitr, B. Chuluun, and O. V. Shipin. 2007. IMS-free DNA extraction protocol for the PCR-based detection of *Cryptosporidium* and *Giardia* in surface and waste water. *International Journal for Environmental Health Research*, London, 17 (4), 294-307.
30. Shipin O.V. and Meiring P.G.J. 2005. Chapter 14: Ponds integrated with biofilters/activated sludge, pp. 311-327. In: *Pond treatment technology* (Ed. A. Shilton) Integrated Environmental Technology series, International Water Association, London.
31. O. Shipin, T. Kootatep, Nguyen Tran Thien Khanh and C. Polprasert. 2005. Integrated Natural Systems for developing communities: low-tech N-removal through fluctuating microbial pathways. *Water Science and Technology*, 51, 12-20.
32. A. Kadushkin, Z. Siddiqui and O. Shipin. 2004. Groundwater quality assessment and management in selected countries of East and South-East Asia. *Water Resources Journal (United Nations Organization)*, 216, 83-108.
33. Rose P.D., Shipin O.V., Dunn K.M., Maart B.A. 2002. Salinity, sanitation and sustainability: integrated algal ponding systems and the treatment of saline wastewaters: Volume 2: mesosaline wastewaters: *Spirulina* model. Research Report TT 188/02. Water Research Commission of South Africa.
34. Rose P.D., Shipin O.V., Hart O.O., Ellis P.J. 2002. Salinity, sanitation and sustainability: integrated algal ponding systems and the treatment of domestic and industrial wastewaters: The AIWPS model. Volume 3, Part 1. Research Report TT 190/02. Water Research Commission of South Africa.
35. Rose P.D., Shipin O.V., Hart O.O., Muller J.R. 2002. Salinity, sanitation and sustainability: integrated algal ponding systems and the treatment of domestic and industrial wastewaters: Abattoir wastewaters, Volume 3, Part 2, Research Report TT 191/02. Water Research Commission of South Africa.
36. Shipin O.V., Meiring P.G.J., Hoffmann J.R. 2000. PETRO concept: a tentative approach to biological phosphorus removal incorporating waste stabilisation ponds. *Water Science and Technology*, 42, 10, 223-229.
37. Shipin O.V., Meiring P.G.J., Phaswana R.K, Kluever H.J. 1999. Integrating ponds and activated sludge process in the PETRO concept. *Water Research*, 33, 8, 1767-1774.
38. Shipin O.V., Meiring P.G.J., Rose P.D. 1999. Microbial processes underlying the PETRO concept (trickling filter variant). *Water Research*, 33, 7, 1645-1651.
39. Shipin O.V., Meiring P.G.J. 2000. Transforming the PETRO process to provide for Biological Nutrient Removal. *Final report to the SA Water Research Commission on the project No. K5/971(1998-2000)*, Pretoria, South Africa.
40. Meiring P.G.J., Cronwright M., Hoffmann J.R., Shipin O.V. 1998. Novel process gives new viability to biological trickling filters: Newcastle case study. *Proceedings of the 5th Water Institute of Southern Africa Biannual Conference*. 1998 May, Cape Town, South Africa.
41. Shipin O. V., Meiring P.G.J., Rose P.D. 1998. PETRO system: a low tech approach to the removal of wastewater organics (incorporating an effective removal of micro-algae by the trickling filter). *Water SA*, 24, 4.

42. Meiring P.G.J., Shipin O.V., Rose P.D. 1998. Removal of algal biomass and final treatment of oxidation pond effluents by the PETRO process.1996-1997 (ASP variant). *Final report to the SA Water Research Commission on the project K5/713*. Pretoria, South Africa .
43. Shipin O.V., Meiring P.G.J., Rose P.D. PETRO: a low tech system with a high tech performance. 1997. *Water Quality International* (currently Water 21), 5, 41-45.
44. Meiring P.G.J., Rose P.D., Shipin O. V., Oellermann R.K. 1995. Removal of algal biomass and final treatment of oxidation pond effluents by the PETRO process. (Trickling filter variant). *Final Report to the Water Research Commission of South Africa on the project K5/491 (1994-1995) " Pond Enhanced Treatment and Operation (PETRO)"*.
45. Meiring P.G.J., Rose P.D., Shipin O. V. 1994. Algal aid puts a sparkle on effluent. *Water Quality International*, (currently Water 21), 2, 30-32.

## **RECENT PROJECTS**

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1. Effective Microorganisms and Water Safety Plans. Funding Agency: WHO. Nov 2012-Dec 2013
2. Pollution Mitigation in Coastal Communities via the Multi-functional Wetland (Mangrove) approach with Biodiversity and Sustainable Agri-Business Co-benefits, jointly with UNIPA, State University of Papua, Indonesia. Funding Agency: UNEP. Aug 2012-Dec 2014
3. Strategic Environmental Assessment for N.-C. Afghanistan to ensure sustainable use of water resources. Funding agency: British Council. Sept 2010-Apr 2013
4. A Euro-Asia Partnership for the Development of Human Resource Capacity of Engineering Education in Afghanistan. Funding Agency: EU. June 2008-June 2011
5. Real-time PCR Diagnostic Kit for *Giardia* and *Cryptosporidium* parasites. Funding Agency: NIH USA. Aug 2008-July 2009
6. Development of Options Analysis and Feasibility Study for the Long term Storage of Mercury in Asia. Funding Agency: UNEP. Apr 2009-Apr 2010
7. Evaluation of Environmental Pollution and its Mitigation by Natural Treatment Systems linked to Agriculture/Aquaculture and Conservation of Bio-diversity in Selected Ecologically Sensitive Sites in Thailand and Sri Lanka. Funding Agency: World Bank. Jan 2006-Dec 2008

## **PROFESSIONAL AFFILIATIONS**

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1. International Water Association, IWA, London.
2. Water Institute of Southern Africa, WISA, South Africa
3. International Society for Mangrove Ecosystems, ISME

## **RESEARCH KEYWORDS**

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1. Environmental Impact Assessment
2. Environmental Microbiology
3. Eco-cities
4. Natural Treatment Systems