

# Evaluated Literature - Material Zinc Oxide Uptake in Environmental Organisms

## (Status Nov 2017)

For the current articles in the DaNa knowledge based on zinc oxide nanoparticles in relation to environmental topics additional scientific publications were used, which are listed in this document sorted by organism. All listed publications underwent the DaNa literature evaluations process and passed the requirements of the DaNa literature criteria checklist. In case several organisms were covered in one publications, they are listed for each organism in this document (Status Nov 2017).

### Microorganisms

- Adams, LK et al. (2006), Water Res, 40(19): 3527-3532. <https://doi.org/10.1016/j.watres.2006.08.004>
- Baek, Y.-W. & An, Y.-J. (2011), Sci Tot Environ, 409: 1603-1608. <https://doi.org/10.1016/j.scitotenv.2011.01.014>
- Bandyopadhyay, S et al. (2012), J Hazard Mater, 241-242, 379-38. <https://doi.org/10.1016/j.jhazmat.2012.09.056>
- Bayat, N et al. (2014), Nanotoxicol, 8 (4): 363-373. <https://doi.org/10.3109/17435390.2013.788748>
- Blinova, I et al. (2010), Environ Pollut, 158(1): 41-47. <https://doi.org/10.1016/j.envpol.2009.08.017>
- Collins, D et al. (2012), PLOS ONE, 7(8): e42663. <https://doi.org/10.1371/journal.pone.0042663>
- Dhas, SP et al. (2014), J Basic Microbiol, 14: 916-927. <https://doi.org/10.1002/jobm.201200316>
- Fang, X. et al. (2010), J Colloid Interface Sci, 348: 329-334. <https://doi.org/10.1016/j.jcis.2010.04.075>
- Ge, Y et al. (2011), Environ Sci Technol, 45: 1659-1664. <https://doi.org/10.1021/es103040t>
- Goix, S et al. (2014), Environ Res, 133: 185-194. <https://doi.org/10.1016/j.envres.2014.05.015>
- Gonzalez-Estrella, J et al. (2013), J Hazard Mater, 260: 278-285. <https://doi.org/10.1016/j.jhazmat.2013.05.029>
- Heinlaan, M et al. (2008), Chemosphere, 71(7): 1308-1316. <https://doi.org/10.1016/j.chemosphere.2007.11.047>
- Hu, X et al. (2009), Sci Total Environ, 407(8): 3070-3072. <https://doi.org/10.1016/j.scitotenv.2009.01.033>
- Huang, YC et al. (2014), Sci Tot Environ, 497-498: 78-90. <https://doi.org/10.1016/j.scitotenv.2014.07.100>
- Huang, Z et al. (2008), Langmuir, 24(8): 4140-4144. <https://doi.org/10.1021/la7035949>
- Ivask, A et al. (2010), Anal Bioanal Chem, 398(2): 701-716. <https://doi.org/10.1007/s00216-010-3962-7>
- Jiang, W et al. (2009), Environ Pollut, 157(5): 1619-1625. <https://doi.org/10.1016/j.envpol.2008.12.025>
- Josko, I & Oleszczuk, P (2013), Environ Sci: Processes Impacts, 15: 296-306. <https://doi.org/10.1039/c2em30653k>
- Kasemets, K et al. (2009), Toxicol In Vitro, 23(6): 1116-1122. <https://doi.org/10.1016/j.tiv.2009.05.015>
- Kim, AW & An, Y.-J. (2012), Appl Microbiol Biotechnol, 95: 243-253. <https://doi.org/10.1007/s00253-012-4153-6>
- Kumar, A et al. (2011), Free Radic Biol Med, 51: 1872-1881. <https://doi.org/10.1016/j.freeradbiomed.2011.08.025>
- Li, M et al. (2011), Environ Sci Technol, 45: 755-761. <https://doi.org/10.1021/es102266g>
- Li, M et al. (2013), Environ Pollut, 173: 97-102. <https://doi.org/10.1016/j.envpol.2012.10.026>
- Li, M. et al. (2011), Environ Sci Technol, 45: 1977-1983. <https://doi.org/10.1021/es102624t>
- Liu, G et al. (2011), Sci Tot Environ, 409: 2852-2857. <https://doi.org/10.1016/j.scitotenv.2011.03.022>
- Mcquillan, JS et al. (2014), Biosens Bioelectron, 51: 274-279. <https://doi.org/10.1016/j.bios.2013.07.024>
- Miller, RJ et al. (2010), Environ Sci Technol, 44(19): 7329-7334. <https://doi.org/10.1021/es100247x>
- Mohanty, SR et al. (2014), Environ Monit Assess, 186: 3743-3753. <https://doi.org/10.1007/s10661-014-3654-4>
- Mortimer, M et al. (2010), Toxicology, 269(2-3): 182-189. <https://doi.org/10.1016/j.tox.2009.07.007>
- Musee, N et al. (2014), J Environ Sci Health A Tox Hazard Subst Environ Eng, 49 (1): 59-66. <https://doi.org/10.1080/10934529.2013.824302>
- Nair, S et al. (2009), J Mater Sci Mater Med, 20 Suppl 1(1): S235-241. <https://doi.org/10.1007/s10856-008-3548-5>
- Neal, AL et al. (2012), Nanotox, 6 (4): 371-380. <https://doi.org/10.3109/17435390.2011.579633>

Pan, X et al. (2010), Chemosphere, 79(1): 113-116.  
 Patra, P et al. (2012), Langmuir, 28: 16966-16978.  
 Reddy, KM et al. (2007), Appl Phys Lett, 90(213902): 2139021-2139023.  
 Waalewijn-Kool, PL et al. (2013), Environ Pollut, 178: 59-64.  
 Waalewijn-Kool, PL et al. (2013), Environ Toxicol Chem, 32 (10): 2349-2355.  
 Wang, Z et al. (2010), Chemosphere, 80(5): 525-529.  
 Wu, B et al. (2010), Environ Sci Technol, 44(4): 1484-1489.  
 Yoshida, R et al. (2009), J Toxicol Sci, 34(1): 119-122.

<https://doi.org/10.1016/j.chemosphere.2009.12.056>  
<https://doi.org/10.1021/la304120k>  
<https://doi.org/10.1063/1.2742324>  
<https://doi.org/10.1016/j.envpol.2013.03.003>  
<https://doi.org/10.1002/etc.2302>  
<https://doi.org/10.1016/j.chemosphere.2010.04.047>  
<https://doi.org/10.1021/es9030497>  
<https://doi.org/10.2131/jts.34.119>

## Amphibians

Bacchetta, R et al. (2014), Nanotoxicology, 8 (7): 728-744.

<https://doi.org/10.3109/17435390.2013.824128>

## Fish

Bessemer, RA et al. (2015), Nanotoxicol, 9 (7): 861-870.  
 Brun, NR et al. (2014), Sci Tot Environ, 476-477:657-666.  
 Fan, W et al. (2013), PLOS ONE, 8 (11): e78123.  
 Felix, LC et al. (2013), Environ Sci Technol, 47: 6589-6596.  
 Fernandez, D et al. (2013), Sci Tot Environ, 452-453: 262-274.  
 Garcia-Gomez, C et al. (2014), Arch Environ Contam Toxicol, 67: 494-506.  
 Hao, L & Chen, L (2012), Ecotoxicol Environ Safe, 80: 103-110.  
 Hao, L et al. (2013), Ecotoxicol Environ Safe, 91: 52-60.  
 Johnston, BD et al. (2010), Environ Sci Technol, 44(3): 1144-1151.  
 Kaya, H et al. (2015), Environ Toxicol Pharmacol, 40 : 936-947.  
 Lee, J.-W. et al (2014), Ecotoxicol Environ Safe, 104: 9-17.  
 Wehmas, LC et al. (2015), Toxicol Reports, 2: 702-715.  
 Wong, SWY & Leung, KMY (2013), Nanotoxicology, 8 (Suppl.1): 24-35.  
 Xiong, D et al. (2011), Sci Tot Environ, 409: 1444-1452.  
 Yu, L.P. et al. (2011), J Environ Monit, 13: 1975-1982.  
 Zhao, X et al. (2013), Aquat Toxicol, 136-137: 49-59.  
 Zhou, Z et al. (2015), Beilstein J Nanotechnol, 6: 1568-1579.  
 Zhu, X et al. (2008), J Environ Sci Health A Tox Hazard Subst Environ Eng, 43(3): 278-284.  
 Zhu, X et al. (2009), Nanotechnology, 20(19): 195103.

<https://doi.org/10.3109/17435390.2014.982737>  
<https://doi.org/10.1016/j.scitotenv.2014.01.053>  
<https://doi.org/10.1371/journal.pone.0078123>  
<https://doi.org/10.1021/es401403p>  
<https://doi.org/10.1016/j.scitotenv.2013.02.079>  
<https://doi.org/10.1007/s00244-014-0070-2>  
<https://doi.org/10.1016/j.ecoenv.2012.02.017>  
<https://doi.org/10.1016/j.ecoenv.2013.01.007>  
<https://doi.org/10.1021/es901971a>  
<https://doi.org/10.1016/j.etap.2015.10.001>  
<https://doi.org/10.1016/j.ecoenv.2014.01.040>  
<https://doi.org/10.1016/j.toxrep.2015.03.015>  
<https://doi.org/10.3109/17435390.2013.848949>  
<https://doi.org/10.1016/j.scitotenv.2011.01.015>  
<https://doi.org/10.1039/c1em10197h>  
<https://doi.org/10.1016/j.aquatox.2013.03.019>  
<https://doi.org/10.3762/bjnano.6.160>  
<https://doi.org/10.1080/10934520701792779>  
<https://doi.org/10.1088/0957-4484/20/19/195103>

## Crustaceans & Amphipods

Wiench, K et al. (2009), Chemosphere, 76(10): 1356-1365.  
 Adam, N et al. (2014), Environ Pollut, 194: 130-137.  
 Adam, N et al. (2014), Nanotoxicology, 8 (7), 709-711.  
 Ates, M et al. (2013), Environ Sci Process Impacts, 15 (1): 225-233.  
 Blinova, I et al. (2010), Environ Pollut, 158(1): 41-47.  
 Fabrega, J et al. (2012), Environ Sci Technol, 46: 1128-1135.  
 Garcia-Gomez, C et al. (2014), Arch Environ Contam Toxicol, 67: 494-506.

<https://doi.org/10.1016/j.chemosphere.2009.06.025>  
<https://doi.org/10.1016/j.envpol.2014.06.037>  
<https://doi.org/10.3109/17435390.2013.822594>  
<https://doi.org/10.1039/c2em30540b>  
<https://doi.org/10.1016/j.envpol.2009.08.017>  
<https://doi.org/10.1021/es202570g>  
<https://doi.org/10.1007/s00244-014-0070-2>

- Garcia-Gonzales, C et al. (2014), Arch Environ Contam Toxicol, 67: 465-473. <https://doi.org/10.1007/s00244-014-0025-7>
- Hanna, SK et al. (2013), Aquat Toxicol, 142-143: 441-446. <https://doi.org/10.1016/j.aquatox.2013.09.019>
- Heinlaan, M et al. (2008), Chemosphere, 71(7): 1308-1316. <https://doi.org/10.1016/j.chemosphere.2007.11.047>
- Li, W.-M. et al. (2013), Water Res, 47: 895-902. <https://doi.org/10.1016/j.watres.2012.11.018>
- Lopes, S et al. (2014), Environ Toxicol Chem, 33 (1): 190-198. <https://doi.org/10.1002/etc.2413>
- Manzo, S et al. (2011), Environ Sci Pollut, 18: 756-763. <https://doi.org/10.1007/s11356-010-0421-0>
- Mwaanga, P et al. (2014), Aquat Toxicol, 150: 201-209. <https://doi.org/10.1016/j.aquatox.2014.03.011>
- Pipan-Tkalec, Z et al. (2010), Toxicology, 269(2-3): 198-203. <https://doi.org/10.1016/j.tox.2009.08.004>
- Poynton, HC et al. (2011), Environ Sci Technol, 45: 762-768. <https://doi.org/10.1021/es102501z>
- Poynton, HC et al. (2013), Environ Sci Technol, 47: 9453-9460. <https://doi.org/10.1021/es401396t>
- Santo, N et al. (2014), Water Res, 53: 339-350. <https://doi.org/10.1016/j.watres.2014.01.036>
- Seo, J et al. (2014), Bull Environ Contam Toxicol, 93: 257-262. <https://doi.org/10.1007/s00128-014-1337-z>
- Tourinho, PS et al. (2013), Environ Toxicol Chem, 32 (12): 2808-2815. <https://doi.org/10.1002/etc.2369>
- Wong, SWY & Leung, KMY (2013), Nanotoxicology, 8 (Suppl.1): 24-35. <https://doi.org/10.3109/17435390.2013.848949>
- Zhu, X et al. (2009), J Nanopart Res, 11(1): 67-75. <https://doi.org/10.1007/s11051-008-9426-8>

## Worms

- Garcia-Gomez, C et al. (2014), Arch Environ Contam Toxicol, 67: 494-506. <https://doi.org/10.1007/s00244-014-0070-2>
- Hooper, HL et al. (2011), Environ Int, 37: 1111-1117. <https://doi.org/10.1016/j.envint.2011.02.019>
- Li, L.-Z. et al. (2011), Environ Int, 37: 1098-1104. <https://doi.org/10.1016/j.envint.2011.01.008>
- Ma, H et al. (2009), Environ Toxicol Chem, 28(6): 1324-1330. <https://doi.org/10.1897/08-262.1>
- Ma, H et al. (2011), Environ Pollut, 159: 1473-1480. <https://doi.org/10.1016/j.envpol.2011.03.013>
- O'Rourke, S et al. (2015), Ecotoxicol, 24: 1372-1384. <https://doi.org/10.1007/s10646-015-1515-8>
- Wang, H et al. (2009), Environ Pollut, 157(4): 1171-1177. <https://doi.org/10.1016/j.envpol.2008.11.004>
- Wu, Q et al. (2013), Chemosphere, 90: 1123-1131. <https://doi.org/10.1016/j.chemosphere.2012.09.019>

## Molluscs

- Ali, D et al. (2012), Aquat Tox, 124-125: 83-90. <https://doi.org/10.1016/j.aquatox.2012.07.012>
- Fahmy, SR et al. (2014), Arch Environ Contam Toxicol, 67: 192-202. <https://doi.org/10.1007/s00244-014-0020-z>
- Fairbairn, EA et al. (2011), J Hazard Mater, 192: 1565-1571. <https://doi.org/10.1016/j.jhazmat.2011.06.080>
- Hanna, SK et al. (2013), PLOS ONE, 8(4): e61800. <https://doi.org/10.1371/journal.pone.0061800>
- Manzo, S et al. (2013), J Hazard Mater, 254-255: 1-9. <https://doi.org/10.1016/j.jhazmat.2013.03.027>

## Algae

- Aruoja, V et al. (2009), Sci Total Environ, 407(4): 1461-1468. <https://doi.org/10.1016/j.scitotenv.2008.10.053>
- Aravantinou, AF et al. (2015), Ecotoxicol Environ Safe, 114: 109-116. <https://doi.org/10.1016/j.ecoenv.2015.01.016>
- Chen, P et al. (2012), Environ Sci Technol, 46: 12178-12185. <https://doi.org/10.1021/es303303g>
- Franklin, NM et al. (2007), Environ Sci Technol, 41(24): 8484-8490. <https://doi.org/10.1021/es071445r>
- Garcia-Gomez, C et al. (2014), Arch Environ Contam Toxicol, 67: 494-506. <https://doi.org/10.1007/s00244-014-0070-2>
- Garcia-Gonzales, C et al. (2014), Arch Environ Contam Toxicol, 67: 465-473. <https://doi.org/10.1007/s00244-014-0025-7>
- Gunawan, C et al. (2013), J Hazard Mater, 260: 984-992. <https://doi.org/10.1016/j.jhazmat.2013.06.067>

- Hazeem, L et al. (2015), Environ Sci Pollut, just published online.  
<https://doi.org/10.1007/s11356-015-5493-4>
- Lee, W.-M. & An, Y.-J. (2013), Chemosphere, 91: 536-544.  
<https://doi.org/10.1016/j.chemosphere.2012.12.033>
- Merdzan, V et al. (2014), Sci Tot Environ, 488-489: 316-324.  
<https://doi.org/10.1016/j.scitotenv.2014.04.094>
- Miao, A.-J. et al. (2010), Environ Toxicol Chem, 29 (12): 2814-2822.  
<https://doi.org/10.1002/etc.340>
- Peng, X et al. (2011), Aquat Toxicol, 102: 186-196.  
<https://doi.org/10.1016/j.aquatox.2011.01.014>
- Wong, SWY & Leung, KMY (2013), Nanotoxicology, 8 (Suppl.1): 24-35.  
<https://doi.org/10.3109/17435390.2013.848949>
- Zhou, H et al. (2014), Anal Bioanal Chem, 406: 3689-3696.  
<https://doi.org/10.1007/s00216-014-7773-0>

## Insects

- Kool, PL et al. (2011), Environ Pollut, 159: 2713-2719.  
<https://doi.org/10.1016/j.envpol.2011.05.021>
- Manzo, S et al. (2011), Environ Sci Pollut, 18: 756-763.  
<https://doi.org/10.1007/s11356-010-0421-0>

## Plants

- Lin, D et al. (2008), Environ Sci Technol, 42(15): 5580-5585.  
<https://doi.org/10.1021/es800422x>
- Chen, J et al. (2015), J Hazard Mater, 297: 173-182.  
<https://doi.org/10.1016/j.jhazmat.2015.04.077>
- Du, W et al. (2011), J Environ Monit, 13: 822-828.  
<https://doi.org/10.1039/c0em00611d>
- Ghodake, G et al. (2011), J Hazard Mater, 186: 952-955.  
<https://doi.org/10.1016/j.jhazmat.2010.11.018>
- Hu, C et al. (2013), Arch Environ Cotnam Toxicol, 64: 643-651.  
<https://doi.org/10.1007/s00244-012-9859-z>
- Huang, YC et al. (2014), Sci Tot Environ, 497-498: 78-90.  
<https://doi.org/10.1016/j.scitotenv.2014.07.100>
- Josko, I & Oleszczuk, P (2013), Chemosphere, 92: 91-99.  
<https://doi.org/10.1016/j.chemosphere.2013.02.048>
- Josko, I & Oleszczuk, P (2013), Environ Sci: Processes Impacts, 15: 296-306.  
<https://doi.org/10.1039/c2em30653k>
- Kim, S et al. (2013), J Microbiol Biotechnol, 23(9): 1279-1286.  
<https://doi.org/10.4014/jmb.1304.04084>
- Kumari, M et al. (2011), J Hazard Mater, 190: 613-621.  
<https://doi.org/10.1016/j.jhazmat.2011.03.095>
- Landa, P et al. (2012), J Hazard Mater, 241-242: 55-62.  
<https://doi.org/10.1016/j.jhazmat.2012.08.059>
- Lee, CW et al. (2010), Environ Toxicol Chem, 29(3): 669-675.  
<https://doi.org/10.1002/etc.58>
- Lee, S et al. (2012), J Microbial Biotechnol, 22 (9): 1264-1270.  
<https://doi.org/10.4014/jmb.1203.03004>
- Lee, S et al. (2013), Environ Sci Pollut Res, 20: 848-854.  
<https://doi.org/10.1007/s11356-012-1069-8>
- Lin, D et al. (2007), Environ Pollut, 150(2): 243-250.  
<https://doi.org/10.1016/j.envpol.2007.01.016>
- Lopez-Moreno, ML et al. (2010), Environ Sci Technol, 44(19): 7315-7320.  
<https://doi.org/10.1021/es903891g>
- Manzo, S et al. (2011), Environ Sci Pollut, 18: 756-763.  
<https://doi.org/10.1007/s11356-010-0421-0>
- Mukherjee, A et al. (2014), Metallomics, 6:132-138.  
<https://doi.org/10.1039/c3mt00064h>
- Pokhrel, LR & Dubey, B (2013), Sci Tot Environ, 452-453: 321-332.  
<https://doi.org/10.1016/j.scitotenv.2013.02.059>
- Stampoulis, D et al. (2009), Environ Sci Technol, 43(24): 9473-9479.  
<https://doi.org/10.1021/es901695c>
- Thwala, M et al. (2013), Environ Sci: Processes Impacts, 15: 1830-1843.  
<https://doi.org/10.1039/c3em00235g>
- Yoon, S.-J. et al. (2014), Ecotoxicol Environ Safe, 100: 131-137.  
<https://doi.org/10.1016/j.ecoenv.2013.10.014>
- Zhao, L et al. (2013), J Agric Food Chem, 61: 11945-11951.  
<https://doi.org/10.1021/jf404328e>
- Zhao, L et al. (2014), J Agric Food Chem, 62: 2752-2759.  
<https://doi.org/10.1021/jf405476u>
- Zhao, L et al. (2015), Environ Sci Technol, 49: 2921-2928.  
<https://doi.org/10.1021/es5060226>