IN THIS ISSUE:

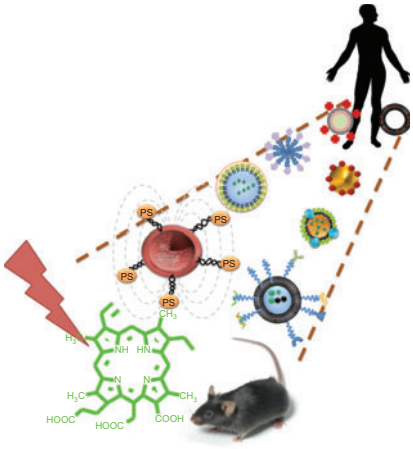
Ying-Ying Huang, Sulbha K. Sharma, Tianhong Dai, Hoon Chung, Anastasia Yaroslavsky, Maria Garcia-Diaz, Julie Chang, Long Y. Chiang and Michael R. Hamblin

Can nanotechnology potentiate photodynamic therapy?

DOI 10.1515/ntrev-2011-0005
Nanotechnol Rev 1 (2012): 111–146

Review: Applications of nanotechnology to PDT cover a wide range of lipid, polymer, ceramic, magnetic and other nanoparticles that can improve photosensitizer delivery, together with fullerenes, carbon nanotubes and quantum dots, and we ask whether nanotechnology will truly improve the translation of PDT from mouse to man.

Keywords: cancer; drug delivery; nanoparticles; photodynamic therapy; targeting.



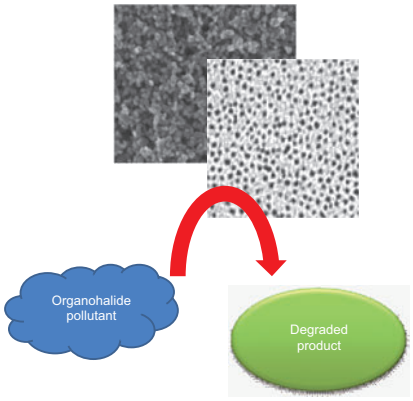
Ali Bolandi, Setare Tahmasebi Nick and Sherine O. Obare

Nanoscale materials for organohalide degradation *via* reduction pathways

DOI 10.1515/ntrev-2012-0003
Nanotechnol Rev 1 (2012): 147–171

Review: The article reviews the degradation mechanisms involved in the reactions of nanoscale particles with organohalides *via* reduction pathways.

Keywords: multi-electron transfer catalysts; nanoscale materials; organohalide contaminants; reduction; synthesis.



Loredana Serpe, Federica Foglietta and Roberto Canaparo

Nanosonotechnology: the next challenge in cancer sonodynamic therapy

DOI 10.1515/ntrev-2011-0009
Nanotechnol Rev 1 (2012): 173–182

Review: Nanoparticles may improve the synergistic effect of ultrasound and chemical compounds, known as sonosensitizers, able to elicit electronic excitation by energy transfer leading to cancer cell killing through the formation of reactive oxygen species.

Keywords: cancer; nanoparticles; sonodynamic therapy; sonosensitizers; ultrasounds.