

<p>Title:</p> <p>Author:</p> <p>Journal/Site:</p> <p>Date Published:</p>	<p>Transformations that affect fate, form and bioavailability of inorganic nanoparticles in aquatic sediments</p> <p>https://www.researchgate.net/publication/280945058_Transformations_that_affect_fate_form_and_bioavailability_of_inorganic_nanoparticles_in_aquatic_sediments</p>
<p>Step 1. Read the article closely noting ethical, moral and civil issues raised</p>	<p>Completed 20 June 2017</p>
<p>Step 2 Briefly describe the nanotech science addressed in the article</p>	<p>Engineered nanomaterials are increasingly being used and their release to the aquatic environment poses potential risk. We review the research on transformations of engineered nanomaterial in the aquatic sediment environments, and consider the implications of their release. The key factors defining the fate of engineered nanomaterials in aqueous and sediment systems are identified.</p> <p>On the basis of these findings, we recommend future research areas which will support prospective risk assessment by enhancing our knowledge of the transformations ENMs undergo and the likely effects these will have.</p>
<p>Step 3 Make a list the moral, ethical and legal issues.</p>	<p>What is the effect of ENMs on the environment? What are the societal responsibilities to protect the environment from harm by ENMs? How has society been keeping up with knowing the effect of ENMs on the environment? What are the government's responsibilities and liabilities in protecting both society and the environment? What are the private sector's (business) responsibilities and liabilities in protecting both society and the environment? How are financial benefits derived from ENM production to be balanced against environmental effects? How are individual and communal needs balanced in regulating ENM production?</p>
<p>Step 4 Notate by each issue, the possible ways in which you think the Torah may speak to the issue</p>	<p>Laws concerning direct and causative damages Mitzvot regarding destruction of resources Dominion over the world versus responsible stewardship Laws of Shmitta and Yovel Covenant between G-d, Jew, and Land</p>
<p>Step 5 Select the Jewish issue(s)/value(s)/law(s) that you will research and present.</p>	<p>Mitzvot regarding destruction of resources Dominion over the world versus responsible stewardship Covenant between G-d, Jew, and Land</p>

<p>Step 6 Create a bibliography of citations that you will reference</p>	<p>Berman: http://www.jewishvirtuallibrary.org/jewish-environmental-values-the-dynamic-tension-between-nature-and-human-needs</p> <p>Gerstenfeld: http://dare.uva.nl/search?arno.record.id=76686</p> <p>Swartz:http://www.jewishvirtuallibrary.org/a-brief-history-of-nature-in-jewish-texts</p> <p>Tirosh-Samuelson: https://www.amacad.org/multimedia/pdfs/publications/daedalus/fall2001/01_fall_daedalus_Tirosh.pdf</p> <p>Vogel: http://faculty.haas.berkeley.edu/vogel/judaism.pdf</p>
<p>Step 7 Prepare and present your narrative connecting the results of your citation research to your listed issues raised above. Present your rationale.</p>	<p>In the first chapter of the Torah, in the discussion of Creation, mankind is charged with - לעבדה ולשמרה - 'to work it and guard it'. Mankind, as an intellectually gifted creation, has a stewardship responsibility towards G-d's world; To guard resources, to protect G-d's creatures and not cause pain. To sustain and not 'over manipulate' creation. Resources need to be reclaimed, restored and not wantonly wasted or abused. A covenant exists between G-d and the world and mankind has key responsibilities in maintaining the terms of the covenant. While ENMs are an acceptable and beneficial improvement to living conditions, mankind has a Torah responsibility to monitor the effects of ENMs on the environment. Balancing human and environmental needs against negative consequences of ENMs must be done carefully, with mindful planning. Also, individual needs must be balanced against those of society.</p>
<p>Step 8 Present your '10 year from now' vision</p>	<p>In 10 years, industrial and regulatory mechanisms will be in place to effectively monitor the effects of ENMs on the environment. Municipal and Jewish systems will be in place to apply statutes as necessary to balance needs (Individual vs. society, human vs. environment). During the 10 years, curriculum is developed for education at appropriate levels to reinforce Torah based environmentalism. In 10 years, the average Jewish citizen will be conversant in the public square of Jewish attitudes and values regarding environmental issues and how to apply said issues to ENM development.</p>