

US EPA ARCHIVE DOCUMENT

Cross-Media Transport and Transformation of Carbonaceous Nanomaterials

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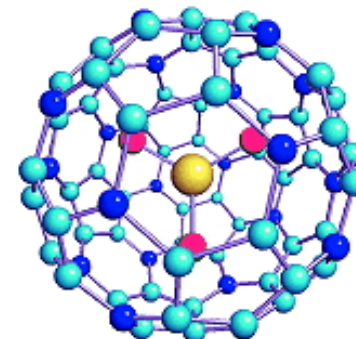
Civil and Environmental Engineering



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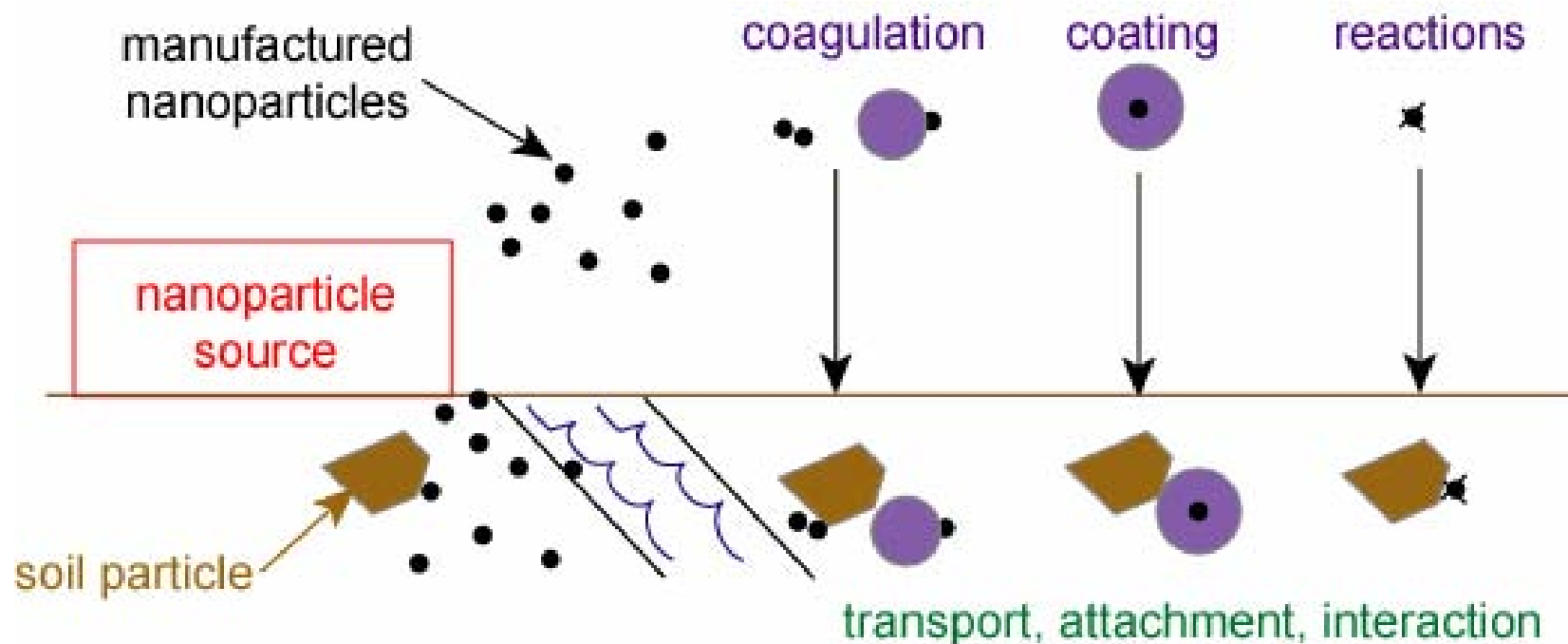
Chemistry



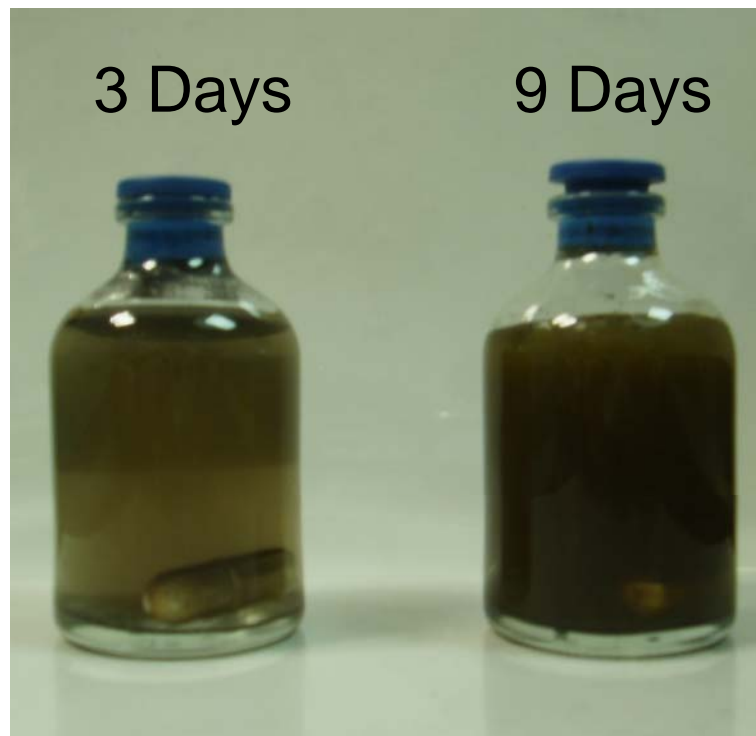
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Objectives

- Characterize behavior of “fresh” versus atmospherically “aged” nanomaterials in aquatic and terrestrial systems



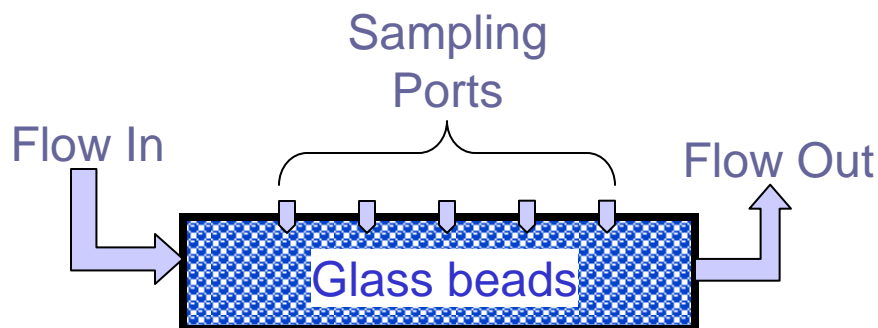
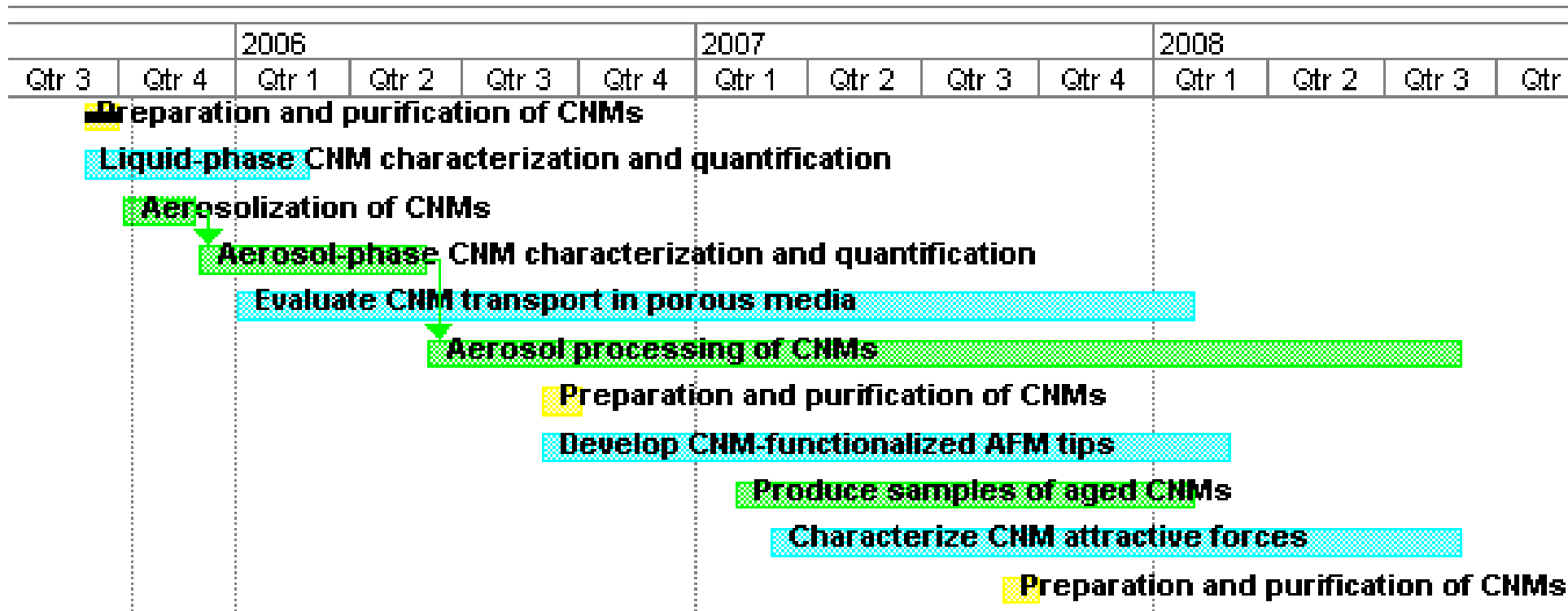
Approach



C_{60} in water

- 1) Quantify the rate of reaction of airborne CNMs with ozone
- 2) Age CNMs in smog chamber
- 3) Evaluate transport of “fresh” and atmospherically “aged” CNMs in porous media
- 4) Develop CNM-functionalized AFM tips
- 5) Quantify adhesive and repulsive forces between CNMs and environmental surfaces

Time Frame



Implications

- Prediction of fate of CNMs in environment
- Assess potential for human exposure
- Overcome barriers to adoption

