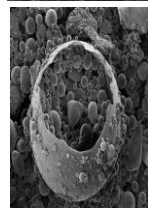
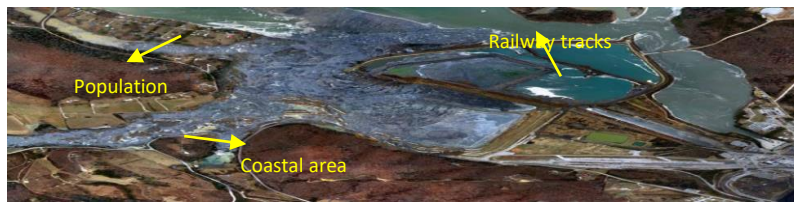


# Value-addition of Coal fly ash (CFA) as emerging photocatalyst for wastewater treatment

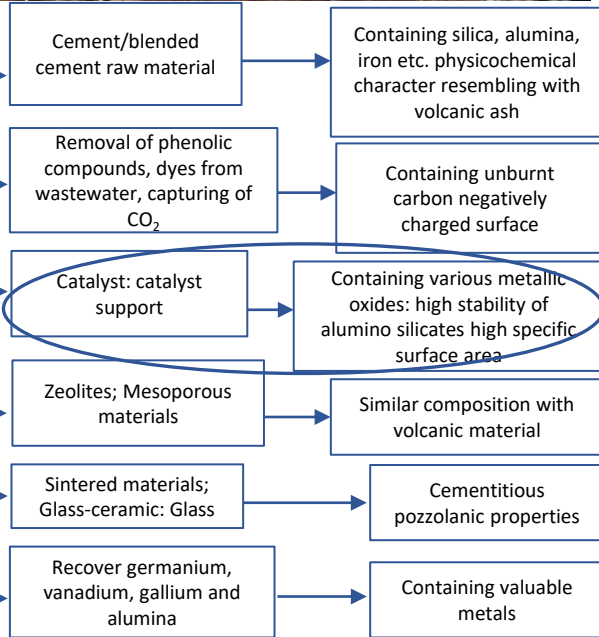
## Project Highlights

The rapid contamination and drastic decrease of clean water sources have heeded the human society for the development and implementation of highly efficient wastewater treatment technologies. Coal fly ash (CFA) can be used as multifunctional material. CFA is an anthropogenic material and its disposal on open land or dumping underground causes serious environmental issues. Instead of disposal, its utilization is advantageous. Therefore, the utilization of CFA and/or its composites in wastewater treatment has been discussed.

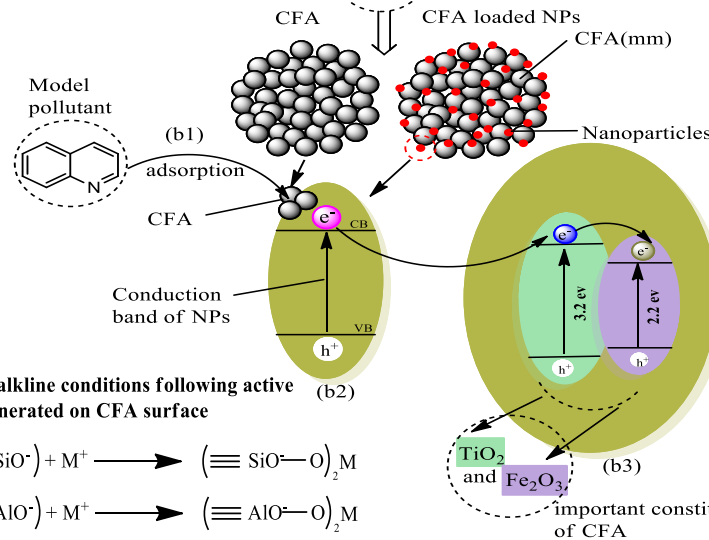
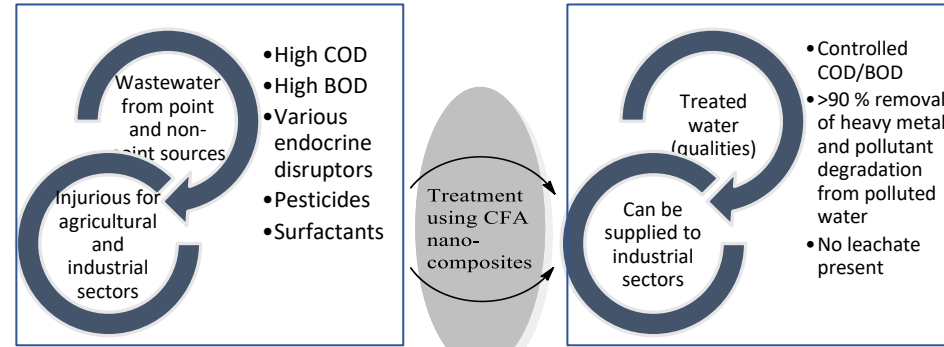
### Negative impact of CFA disposal Kingston Tennessee, USA.



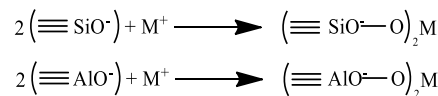
Coal Fly Ash Applications



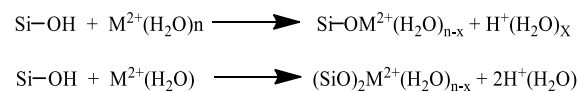
A route : From polluted to treated water via CFA based adsorption enhanced photocatalysis



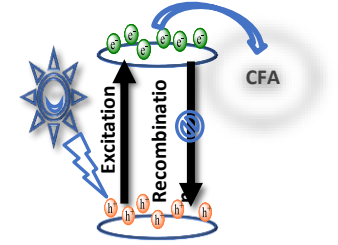
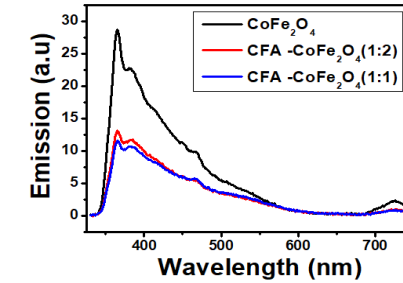
Under alkaline conditions following active sites generated on CFA surface



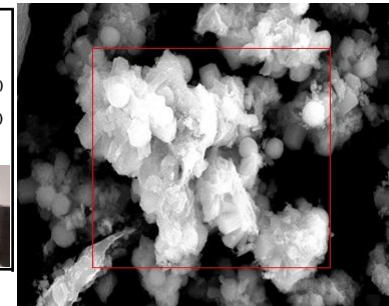
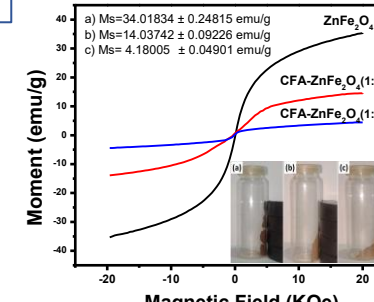
M<sup>2+</sup> and other pollutants can also adsorb on silanol groups of the layer



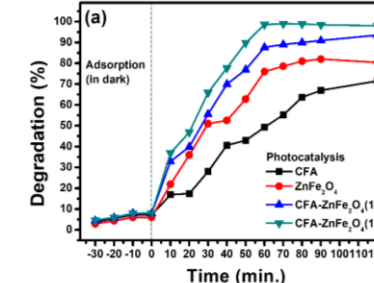
Some of our research contribution towards CFA based photocatalysis



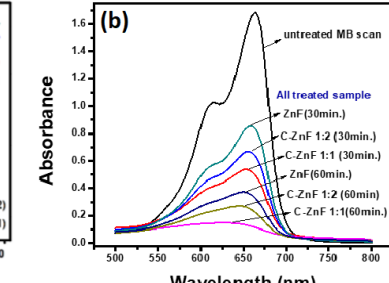
Improved optical response due to CFA insertion in pristine NPs



Magnetic response of CFA based photocatalysts



Improved morphology of CFA based ZnFe2O4



a) Comparison among different photocatalysts b) Spectral scans with reference to time

**CONCLUSION:** The structural and compositional aspects of CFA provide evidence for its use in wastewater remediation. CFA and its nanocomposites provide low-cost alternative for environmental remediation. Instead of CFA disposal, its reusability is highly demanding for pollution control.

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