The presence of organic pollutants in the environment is of major concern because of their toxicity, bio-accumulating tendency, threat to human life and the environment. It is a well-known fact that, these pollutants can damage nerves, liver, and bones and could also block functional groups of essential enzymes. Conventional methods for removing dissolved pollutants include chemical precipitation, chemical oxidation or reduction, filtration, ion-exchange, electrochemical treatment, application of membrane technology, evaporation recovery and biological treatment. Although all the pollutant treatment techniques can be employed, they have their inherent advantages and limitations. Among all these methods, adsorption process is considered better than other methods because of convenience, easy operation and simplicity of design. A fundamentally important characteristic of good adsorbents is their high porosity and consequent larger surface area with more specific adsorption sites. This paper presents a review of adsorption of different pollutants using activated carbon prepared from fly ash sources and the attendant environmental implications. Also, the ways of overcoming barriers to fly ash utilization together with regeneration studies are also discussed.
Carex paniculata constructed wetland efficacy for stormwater, sewage and livestock wastewater treatment in rural settlements of mountain areas

Phosphorus recovery from the sludge generated from a continuous bipolar mode electrocoagulation (CBME) system

Agar agar impregnated on porous activated carbon as a new adsorbent for Pb(II) removal

Assessing the effects of intra-granule precipitation in a full-scale industrial anaerobic digester

Application sodium ferrate produced from industrial wastes for TOC removal of surface water
Fly ash (FA) is a type of industrial waste that can cause multiple environmental problems if discharged into the air. On the other hand, because of its high porosity, large specific surface area, and other unique characteristics, FA can also be used as a low-cost and high efficient adsorbent for treatment of environment pollutants. This paper reviews the effects of FA on treatment of the air.
and water pollution, including to the current status of global FA utilization, physicochemical properties, principle of adsorption, and the application direction of FA in the future. Ge JC, Yoon SK, Choi NJ. Application of Fly Ash as an Adsorbent for Removal of Air and Water Pollutants. Applied Sciences. 2018; 8(7):1116. Chicago/Turabian Style. Ge, Jun C.; Yoon, Sam K.; Choi, Nag J. 2018. The presence of organic pollutants in the environment is of major concern because of their toxicity, bio-accumulating tendency, threat to human life and the environment. It is a well-known fact that, these pollutants can damage nerves, liver, and bones and could also block functional groups of essential enzymes. This paper presents a review of adsorption of different pollutants using activated carbon prepared from fly ash sources and the attendant environmental implications. Also, the ways of overcoming barriers to fly ash utilization together with regeneration studies are also discussed. Download full-text PDF. Source. Abatement of organic pollutants using fly ash based adsorbents. Article. Full-text available. To this end, a novel separation technique based on an aqueous surfactant extraction has been developed for the treatment of a complex medium consisting of a mixture of antibiotics amoxicillin and ampicillin using an anionic surfactant namely Sodium Dodecyl Sulfate (SDS). The efficiency of the applied treatment was evaluated by HPLC analysis.