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## New generation nano-adsorbents for the removal of emerging contaminants in water

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### Abstract:

Nowadays, water contamination due to the drugs and pharmaceuticals residues is increasing and alarming. These contaminants are called as new emerging pollutants. The contamination due to the new emerging contaminants is of great concern due to their endocrine, hormonal and genetic disturbance nature. Also, some drugs and pharmaceuticals residues are converted into chiral metabolites, which are receptor specific and have serious side effects. Water pollution by new emerging pollutants is becoming a subject of global anxiety, with hazardous environmental consequences. Many water resources have been found to have new emerging pollutants. Nano particles are used to remove these pollutants and these are called as new generation nano-adsorbents. These new generation nano-adsorbents are capable to remove new emerging pollutants even at low concentration *i.e.*  $\mu\text{g/L}$  under varied conditions of pH and temperature. The present article describes state-of-the-art of the removal of new emerging pollutants using new generation nano-adsorbents by adsorption technology. The efforts are made to discuss the sources contamination and toxicities of new emergent pollutants, preparation, characterization and separation of new generation nano-adsorbents. Besides, the attempts have also been made to discuss the future perspectives of the new emergent pollutants and new generation adsorbents.

**Keywords:** New emerging pollutants, New generation nano-adsorbents, Water treatment, Adsorption, Future perspective.

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