

ABSTRACT

The present disclosure provides a chemical-biological treatment method for removing nitrogen pollutants from nitrogen-containing wastewater. The method comprises pre-treating the nitrogen-containing wastewater with an oxidizing agent in the presence of a catalyst to form an oligomer mixture; precipitating the oligomer mixture by further addition of the oxidizing agent to obtain a solid precipitate and a supernatant, wherein the supernatant comprises one or more inorganic nitrogen compounds; separating the supernatant from the solid precipitate; and contacting the supernatant with a microbial culture to convert the one or more inorganic nitrogen compounds into nitrogen gas, wherein the catalyst comprises iron-tetraamido macrocyclic ligand (Fe-TAML) or peroxidase; and wherein the microbial culture comprises denitrifying bacteria and anammox bacteria.

[No Figure]