Abstract

The present invention discloses a method of high efficient resourcing an ammonia-nitrogen wastewater comprising the steps of: (1) air stripping ammonia-nitrogen under a pressurized air to obtain a product of ammonia-water while the residual liquid after the air stripping forms a primary ammonia-nitrogen wastewater, (2) extracting ammonia-nitrogen from the primary ammonia-nitrogen wastewater with an extraction agent, the obtained extracted liquid is back-extracted by the ammonia-nitrogen wastewater and returned to step (1) while the residual liquid after extraction forms a secondary ammonia-nitrogen wastewater and (3) conducting osmotic deamination on the secondary ammonia-nitrogen wastewater with a pervaporation membrane the absorbed second absorption liquid is returned to step (1) while the residual liquid after the osmotic deamination forms a treated ammonia-nitrogen wastewater. The method adopts a combined processes to carry out deamination treatment of ammonia-nitrogen wastewater under different pressure conditions based on the composition and concentration of ammonia, achieving a higher total ammonia-nitrogen removal efficiency. Meanwhile, the method recycles the energy from feeding the reaction heat released in a back-extraction process for heating the air for the air stripping and providing the reaction heat and dissolution heat released in the process of absorbing ammonia for heating the secondary ammonia-nitrogen wastewater for osmotic deamination.

(Fig. 1)