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# Biological nitrogen removal from sewage via anammox: Recent advances

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**Abstract:** Biological nitrogen removal from sewage via anammox is a promising and feasible technology to make sewage treatment energy-neutral or energy-positive. Good retention of anammox bacteria is the premise of achieving sewage treatment via anammox. Therefore the anammox metabolism and its factors were critically reviewed so as to form biofilm/granules for retaining anammox bacteria. A stable supply of nitrite for anammox bacteria is a real bottleneck for applying anammox in sewage treatment. Nitrification and partial-denitrification are two promising methods of offering nitrite. As such, the strategies for achieving nitrification in sewage treatment were summarized by reviewing the factors affecting nitrite oxidation bacteria growth. Meanwhile, the methods of achieving partial-denitrification have been developed through understanding the microorganisms related with nitrite accumulation and their factors. Furthermore, two cases of applying anammox in the mainstream sewage treatment plants were documented.

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