LED光源種類對光合細菌在水中氨氮去除之影響 = Effects of LED Light Sources on Ammonia Removal from Water by Photosynthetic

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摘 要

隨著光電子技術的快速發展，自1980年中期以來已經顯著提高了發光二極體（LED燈）的亮度和發光效率。發光二極體(LEDs) 因為壽命較長且能量消耗就低，因此提供了光合生物反應器中替代光源，而且LED燈具有特定的狹窄範圍之光波長，因此，亦可提供光合細菌所需的特定波長光源。本研究探討了五種光源對光合細菌的生長和NH4+-N去除的影響。光源分別為：白熾燈（IL）、發光二極管（LED）之白色(LW)、紅色（LR）、藍色（LB）、綠色（LG）。以黑暗條件作為對照組。對於細菌生長濃度的影響，由高到低為:綠色LED燈>白色LED燈>白熾燈>紅色LED燈>藍色LED燈>黑暗。另外，在氨氮去除效率方面，結果顯示在曝氣條件下，紅色LED燈和藍色LED燈可以促進光合細菌去除NH4+-N的效率達將近100%。

關鍵詞 : 氨氮、硝化作用、光合細菌、發光二極管

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