

### 风光电能驱动的曝气生物接触氧化水净化系统的研发

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### Wind and Solar Energy Powered Water Purification System of Aerobic Biological Contact Oxidation

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**摘要** 按照系统集成的设计思想,研发了利用太阳能、风能绿色能源驱动的风光电能河湖水体净化系统。系统由风光互补发电子系统、曝气生物接触氧化子系统、植物生态子系统3部分组成。系统连续运行7个月多的水质检测结果表明,系统对于水体充氧和改善水质有比较强的功能,曝气区溶解氧保持在 $6.5\sim 11.2\text{ mg}\cdot\text{L}^{-1}$ ,系统净化处理后的水比原水水质提高1个等级。

**关键词:** 水净化系统 风光电能 太阳能 风能 曝气生物接触氧化 微污染水

**Abstract:** According to the designing idea of integration system, a river-lake waterbody purification system powered by green energy (solar and wind energy) was developed. The system is composed of three sub-systems, i.e. solar and wind power generator system, aerobic biological contact oxidation system and phyto-biological system. The tests of water quality after the system operated continuously for over 7 months demonstrate that the system performed quite well, in oxygenating the waterbody and improving its water quality. The content of dissolved oxygen in aerated zone was maintained in the range of  $6.5\sim 11.2\text{ mg}\cdot\text{L}^{-1}$ . The water after treatment in the purification system was uplifted by one grade in quality.

**Keywords:** water purification system wind and solar energy aeration biological contact oxidation solar energy wind energy slightly-polluted water

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