Heating biogas digester with solar energy: Research status and prospects

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Solar heated biogas production technology, not only helps to improve the rate of anaerobic fermentation and biogas production yield, but also solves the problems like low yield or no biogas production under the cold circumstance very effectively. This technology supplies the energy efficiently and steadily with solar and bio-energy, and it has become a research focus for renewable energy, both in China and other countries. The summary of the related research status and the exploration about the prospects of this research development can contribute to the improvement of the technology. For this purpose, we have worked on the solar warming systems for small biogas production systems and biogas projects, including operation principle, thermal performance, biogas productivity, advantages and disadvantages, system applicability and so on. The prospective development of various solar heated biogas production systems is also discussed. Focusing on the cost-effective aspect of solar and biomass energy complementary CCHP with biogas system, and the solar and biomass energy complementary CHP with biogas systems was found to be the promising in the direction of small-scale solar warming biogas production systems and biogas project with solar energy. The results serve to guide the biogas production systems with solar warming and its engineering demonstration application; they also have significant value for the beautiful village and ecological civilization construction of China.

Biography

Huang Juanjuan has done her Master’s degree from Lanzhou University in the year 2012. She is an Engineer in the Key Laboratory of Complementary Energy System of Biomass and Solar Energy, Gansu Province, China.

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