



搜全文...



Synthetic biology and transgenic system biotechnology

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Study pre-warning of ecological security on basis of fuzzy optimize in Anhui province

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This paper introduces pre-warning of ecological security in region. On basis of pressure, state and response model, the pre-warning indexes system of ecological security is constituted. The pre-warning degree judged model of ecological security is constituted on basis of fuzzy optimize. On basis of the model, present condition pre-warning is done on the ecological security in Anhui province. The result is proved to be viable. This paper provides directions, evaluation and analysis on the progress of ecological security for ecological protection in Anhui province.

Keywords: Ecological security; Fuzzy optimize; Pre-warning degree judged model; Pre-warning analysis

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The concept of synthetic biology was created for DNA recombination technology by B. Hobom in 1980, and now is used as systems biology-based genetic engineering since 2000. Engineering of organisms, which includes transgenic micro-organisms, plants and animals such as mammary gland, metabolism and oviduct bioreactors (Zeng, 1995a). On the other way, enzyme engineering, biosensors and nano-biotechnology can be developed for bio-molecular computer. Since establishing the concepts of system bio-medicine (Kamada, 1992), system medicine (Zeng, 1992, 1994a, 1995b), systems biology (Zieglsangberger and Tolle, 1993), system bio-engineering (Zeng, 1994b) and system genetics [8,9], the biosystem science and engineering came be as integrative discipline of cognitive, computer, biomedical and nano-scale science. In 1999, we created the Genbrain Biosystem Network of the World Associates for Biosystem Science and Engineering for exploring of biosystem analytics, genomic intelligence and biosystem technology such as transgenic bioreactor (avian oviduct, herb medicine), cell signalling (gene cloning, medical screen) and neuron computer (gene computation, cell automation). By using of system methodology, computer aid re-design and transgenesis of genes network, artificial biosystems will be produced for engineering of metabolism and re-program of cell used as drug manufacture and organic robots.

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Preparation of nitrifying bacteria inoculums and application in aquarium

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Nitrification is an important process both in home aquaria and commercial aquaculture systems. In the biological ammonia removal system, the nitrifying activity of bacteria has been reported to be extremely low due to the slow growth rate of nitrifying bacteria, the inhibition of nitrification by free ammonia and nitrite ions. It is generally accepted that retaining a large amount of nitrifying bacteria within the biological nitrogen removal system is difficult to achieve.

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