

Water environment systems engineering

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Improving system operation performances necessarily means ensuring better knowledge of the environmental process. It needs a systematic integration of the development of environmental standards and protocols to solve the environmental problems. Ecological informatics (eco-informatics) is defined as interdisciplinary framework by promoting the use of advanced computational technology for the elucidation of principal of information processing at and between all levels of complexity of ecosystem – from genes to ecological networks and adding transparent decision-making in relation to important issues in ecology such as sustainability, biodiversity and global warming. Eco-informatics is an excellent tool to link information from microscopic and macroscopic scales, from short and long time frames, and from fundamental and practical knowledge and finally to translate data-rich sources into information-rich one. A diverse range of PSE applications of modeling, control, optimization, process monitoring, that is, a kind of eco-informatics, has been evolved in wastewater treatment process. This paper is to introduce a new frontier of PSE tools to ecosystem, specially focused on water environment system.