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MICROALGAE AS AN IMPERATIVE TOOL FOR NEW DESIGN AND BUILDING OF BIOLOGICAL SYSTEM

Armen B Avagyan

Centre of Photosynthesizing organism-Feed Additives and Physiologically Active Compounds- ISTC, Armenia

The environment is one of the main current challenges as critically imperative for economic and social progress. Microalgae (*Cyanobacteria* and single-cell green algae) production is one-third of total biomass worldwide and contributes 50% of atmospheric oxygen. Their composition may consist from 50-70% protein, more 30% lipids, and vitamins B, E, K, D, etc. in comparison with other plants or animals. Algae have remained also the most effective tool for the primary accumulation of bioenergy. We use nature's models (biomimicry) and developed Theory of global sustainable development based on involvement of microalgae in bio and industrial cycles. New design and building of biological system that organically runs through the use of the microalgae as general natural creator of life conditions aimed to GHGs emission and waste mitigation through the production of food, feed, biopharmaceuticals, fertilizers, cosmetics ingredients and biofuels (2012-2013). Further application of system analysis aimed to assessment algae technologies, resources, economics, policy and regulations influences show big potential microalgae application to solve human problems (book by Avagyan AB entitled Algae to energy and sustainable development, technologies, resources, economics and system analyses. New Design of Global Environmental Policy and Live Conserve Industry, Amazon). The analyses showed that development of microalgae producing have all necessary unlimited resources such as land and water (wastewater and groundwater). According to the our approach, a spread of algae global scale cultivation can promote new design and building of biological systems as well as an opening possibility for the shift from non-efficient protection of the environment to its cultivation in a large scale with mitigation of GHG emission and waste as well as generating of O₂ and value-added products. This is the non-alternative path with significant longer-term effects.

armin.av@hotmail.com