COLOUR CHANGES ANALYSIS OF ALGAE POPULATIONS ON RGB COLOUR MODEL SCALE

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Abstract

One of the biggest issue in our time, that we don't use our sources sustainable, there is not enough caring of recycling, and our natural elements reducing, and it is wasted by humanity. However, there are many aspirations, but some of them is not developed enough to achieve the level of our age. We can feel the tension between developed and developing countries, and while there are many differences is mentality, there are many similarities as well. Either sides don't really make that effort, or investments, they blame the other side, they expect the solution from anybody, but themselves.

Recycling the water, by return it to original surfaces in condition that is harmless to the biosphere is the main purpose ow wastewater treatment. There are many differences like communal (residential) wastewater, or industrial wastewater, but the demand is the same to a sewage plant, treat the loaded water from components, that risks any biological or chemical hazards.

While developing and developed countries are not located on the same level in technology or education, the needs, the requirements are the same. Safely and simply operating treatment plant, with the efficiency, that causes no pollution, to the environment, leaves small biologic footprint as much as possible, with low operating costs.

The 21th century brought brand new technologies in communication, and data transmission, and these technologies need to implant to environmental technologies as well. Monitoring a facility, and gain reliable data is not an easy task, which gains more difficulties by the difference of the education level of developing countries. To gain data for a wastewater treatment plant, has its own difficulties, it must to measure properly the fluctuation of components, while the sensitive irritable sensors must be cleaned hourly, risking the damage. These incidental mistakes can cause inaccuracies, and this way the efficiency of a treatment plant reduce.

The selective color measuring is a well-tried technology in remote sensing, different wavelengths has different meanings, and can be transformed to usable data. While the optical sensors developed in the last two decades, the idea came up, to implant it the wastewater treatment, as an optical measuring.

We used algae populations as indicators for well-known pollutants, focused on components that can evoke eutrophication. We used professional and general devices, two measure colors, and compare them, and tried to gain usable data using mainly RGB coding.

Keywords: color measuring, wastewater, RGB

Acknowledgements: This research was supported by the Higher Education Institutional Excellence Program (1783-3/2018/FEKUTSTRAT) awarded by the Ministry of Human Capacities within the framework of water related researches of Szent István.