

**O 123. DETERMINATION OF ENVIRONMENTAL MICROORGANISMS BY IMAGE
PROCESSING**

Alper Alver¹, Emine Baştürk¹, Mustafa Işık^{1*}

¹*Department of Environmental Engineering, Engineering Faculty, Aksaray University, Aksaray-
Turkey*

E-mail: mustafaisik55@hotmail.com

ABSTRACT: Environmental microorganisms are microscopic organisms found in natural (lake, river, sea, air, soil, etc) and artificial (suspended and attached biological reactor, oxidation ponds, constructed wetlands etc) environments that cannot be seen with the naked eye. The classification of environmental microorganisms is very important in monitoring environmental quality and operating biological reactors. However, microbiological analyzes are quite time consuming, laborious and expensive by conventional methods. In recent years, rapid advances in optical and software technology have allowed conceptualization and rapid recognition of small organisms such as bacteria and protozoa (0.1-100 µm) by means of microscopes. In this new classification technology, which is known as digital image processing, the microorganisms are preferably stained with a suitable dyestuff with taking the images by microscope, after this image is processed morphologically and then taken into the computer's memory. Identification of the microorganism is performed by comparing with the processed images. In this study, the method of image processing which is very advantageous compared to the laborious classical methods and the expensive molecular microorganism determination methods, are explained conceptually and information about the limited studies are given.

Keywords: Environmental microorganisms, Identification, Image, Microscopy, Processing