An artificial intelligence approach for identification of microalgae cultures.

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Abstract

In this work, a model for the characterization of microalgae cultures based on artificial neural networks has been developed. Data acquisition has been performed using FlowCam, a device capable of capturing images of the cells detected in a culture sample, which are used as inputs by the model. The model can distinguish between 6 different genera of microalgae, having been trained with several species of each genus. It was further complemented with a classification threshold to discard unwanted objects while improving the overall accuracy of the model. The results demonstrate the accuracy of the Deep Learning models for the characterization of microalgae cultures, it being a useful tool for the monitoring of microalgae cultures in large-scale production facilities.

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