**Fish Eye Image-Based Formalin Detection System**

**Abstract**

The invention discloses a fish eye image-based formalin detection method based on a convolutional neural network. The CNN includes the following steps: configuring fish eye image input shapes into desired dimension, applying image preprocessing technique, obtaining required features or parameters by training the network using sets of convolutional (Conv2D) – pooling (MaxPooling2D) layers, representing extracted features into a one-dimensional array, and predicting the class of these features according to type using the final classifier that receives image information from the CNN.

The method can accurately detect the presence of formalin content in fish samples and is mainly used to help the community in choosing fresh fishes without formalin making it safe for consumption. The method also provides a data collection scheme for conducting analysis as to which places around the country and around the world the presence of formalin on fishes are evident for continuous detection and monitoring.