POSTER SUMMARY

COLOUR MEASUREMENT OF REFINERY STREAMS USING IMAGE ANALYSIS

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Abstract

The measurement of colour is essential in sugar refineries as an indicator of quality control and performance. In South Africa the colour analysis of intermediate streams is typically performed by the laboratory every four hours. Crystalline sugar may therefore already have been produced from problematic liquor before the colour measurement is performed and the result relayed to the relevant staff for the appropriate action to be taken. Ideally, the colour of intermediate streams should be determined online and linked to a digital control system that has an alarm for out-of-specification colour; a swift response could then ensue. To the best knowledge of the authors, only crystalline refined sugar colour is determined online in South Africa and thus the local refineries could benefit from an inexpensive online colour measurement technique for intermediate streams.

Image J® is free image analysis software that is available in the public domain. It is capable of measuring the colour information from an image in the form of red, green and blue (RGB) pixel values. This poster reports on work done at the Sugar Milling Research Institute (SMRI) using Image J® to correlate the RGB pixel values from images of different colour technical solutions (200-2000 ICUMSA units) to the laboratory determined colour of the solutions; the correlation could be used for the development of an online colour measurement system.

Keywords: colour, refinery, quality, online, image analysis, Image J®