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**EVALUATION OF OLD AND NEW TECHNIQUES FOR MEASURING CLEANLINESS  
OF DISTILLATE AND BIOFUELS**

Rick Chapman<sup>1</sup>, Mike Sherratt<sup>2</sup> and Jim Crighton<sup>3</sup>

<sup>1</sup>BP Global Fuels Technology, Warrenville Road, Naperville, IL 60563-8460, USA

<sup>2</sup>Stanhope-Seta, London St, Chertsey, Surrey. KT16 8AP. UK

<sup>3</sup>BP Global Fuels Technology, Whitchurch Hill, Pangbourne, RG8 7QR, UK

Fuel cleanliness testing requirements are becoming more stringent due to the design of modern engines and fuel systems, longer service intervals plus concerns about microbiological growth and the low temperature performance and storage stability of biodiesels.

Appearance and gravimetric tests have been used successfully for over 100 years but are essentially manual methods that rely on operator judgement and technique. This can result in poor precision and results that are often not as reliable as expected.

New or improved automatic techniques can offer more precise and faster results with less operator effort. However, since measurement principles for these new techniques are fundamentally different from existing techniques, there will be issues regarding equivalence criteria that will have to be addressed before these new methods could be considered for use in fuel specifications.

This paper discusses the development of new and improved techniques and compares their performance, precision and results for a wide range of distillate and biofuels.