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EASI-MS applied on Quantitation and quality control of biodiesel/petrodiesel (Bn) blends

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Abstract

Easy sonic-spray ionization mass spectrometry (EASI-MS) allows direct and fast MS analysis of samples in ambient conditions with little or no sample preparation, therefore offering unprecedented simplicity, speed and ease of use. EASI-MS has been shown to access the quality, type(like soybeans, tallow, jatropha) and adulteration of biofuels and vegetable oils. Herein, EASI-MS is shown to quantitate and to monitor the quality of soybean biodiesel/petrodiesel blends (Bn). For adulteration, admixture of the parent oil has been tested, and nearly instantaneously and direct EASI(+)-MS detection of just 1% of soybean oil in biodiesel/petrodiesel blends was achieved. Quite linear analytical curves were also obtained for the quantitation of Bn blends,and the EASI(+)-MS quantitation results were compared with traditional techniques like mid-infrared (IR) spectroscopy.

Biography

Dr. Ildenize Barbosa da Silva Cunha, is a Brazilian Scientist, received bachelor's degree at Química Industrial from Universidade Federal da Paraíba and Masters in Organic Chemistry and doctorate at Analytical Chemistry from Universidade Estadual de Campinas-UNICAMP, Post-Doctorate on Laboratory Thomson of Mass Spectrometry from Universidade Estadual de Campinas-UNICAMP. Stayed 2 months at PRG-University of Calgary-Canada, adapting the technique EASI-MS. Has experience in Chemistry, acting on the following subjects: Ambient techniques in Mass Spectrometry, Quality control on: Biodiesel, oils, Bee products and natural products.