Solvent-aided crystallization for biodiesel purification

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ABSTRACT

The application of solvent-aided crystallization (SAC) is based on the addition of a solvent, here 1-butanol, to crude biodiesel to catalyze the purification process by separating biodiesel from contaminants via crystallization process. Response surface methodology was applied to optimize the process parameters of SAC, represented by biodiesel purity. The purified biodiesel was analyzed by means of gas chromatography-mass spectrometry for the composition of the present fatty acid methyl ester (FAME). Under the predicted optimum process conditions within the experimental ranges for the highest biodiesel purity, the predicted biodiesel purity was 99.375 %.

KEYWORDS

1-butanol; Biodiesel purification; Fatty acid methyl ester; Response surface methodology; Solvent-aided crystallization

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