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Title: Prediction of elemental composition, water content and heating value of upgraded biofuel from the catalytic cracking of pyrolysis bio-oil vapors by infrared spectroscopy and partial least square regression models

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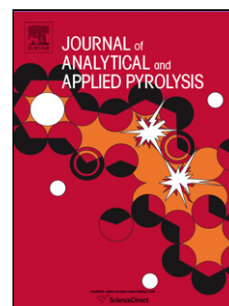
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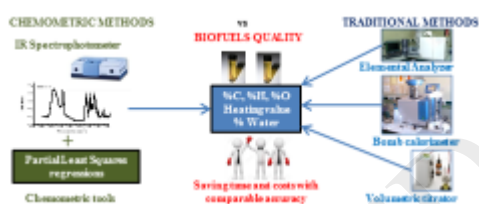
Prediction of elemental composition, water content and heating value of upgraded biofuel from the catalytic cracking of pyrolysis bio-oil vapors by infrared spectroscopy and partial least square regression models.

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Graphical Abstract:



Highlights

- Elemental analysis, water content and heating value were modeled.
- Predictions were checked to prove the robustness of the models
- Good predictions were obtained for all properties with $R^2_{Pre} \geq 0.82$
- Differences between predictions and experimental results were not statistically significant

Abstract

The elemental composition, heating value and water content, are important properties to be characterized for pyrolysis bio-oils, providing information on their quality. These properties are mainly determined according to ASTM standards by using three different

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