**Characterization of Diesel Samples Using GCxGC: Advantages Over Standard Methods and New Application in the Field of Petroleum Industry.**

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The growing need of the European market in diesel fuel combined with the development of new refinery's process require a deeper insight into the middle distillates. Due to higher resolution power and enhanced sensitivity, comprehensive gas chromatography (GC × GC) has been shown as a powerful tool for improving characterisation of petroleum samples by numerous papers [1,2,3]. Recently, an original application of GC× GC to petrochemicals has been presented: the group type separation is highlighted and a comparison with qualitative and quantitative results obtained from conventional GC is also established [4].

In this presentation, we will:

* compare analytical data obtained from GC × GC separations to data from standard methods based on conventional GC, liquid chromatography (LC) and mass spectrometry, in both terms of group type separation and of detailed hydrocarbon analysis. It will be demonstrated the highly interest of GC × GC compared to these techniques in terms of cost, time consumption and accuracy. In particularly, a new approach of simulated distillation (SD - GC × GC) is proposed and has been compared to the standard method ASTM D 2887 leading to unequal information for understanding conversion process.
* apply GC × GC to several problems related to middles distillates (various samples related to refinery process, petrochemical application and oil spill characterisation).

References

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