DEVELOPPEMENT OF ON-LINE AND FIELD
DUAL TD GC - MS
FOR AUTOMATIC VOC MONITORING ON PETROCHEMICAL SITES

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Significance of the Research : Ambient air is polluted by many VOCs coming from Petrochemical Industry. PAMS, Oxygenated or Halogenated VOCs can be found in many ranges of concentration between background and site fence line. These compounds are precursors of ozone and Industrial bodies need to identify them to be in compliance with the authorized limits and to improve their process.

Objectives : Chromatotec is developping a system capable of measuring on line and in field conditions a large number of VOCs from ppt to ppm. The device is reqired to identify automatically potential coeluted compounds by MS technology adapted to industrial context.

Solution adopted: The coupling of two different FID GCs to a Quadrupole MS allowed by an elaborated multiplexer system is the originality of the project: one TDGC for light compounds and one TDGC for heavy compounds with specific trapping conditions and variable sampling volumes.

Results: A measurement campain in petrochemical new site shows the concentration of around 100 compounds at different steps of the commissionning. Variations during specific hours are detected. Potential coeluted compounds as terpenes or organochlorinated are identified and monitored at ppt level.

Conclusion of the project: The ability of coupling in continuous two different GCs to a unique MS and the automatic identification is a new advance in the technology of industrial GC-MS. The big advantage is the possibility to play with two different trapping and thermodesorption techniques linked to one MS. This fully automatic system allows non-specialist operators to access to expertise level results.

Application : H, M
Methodologie : 12