



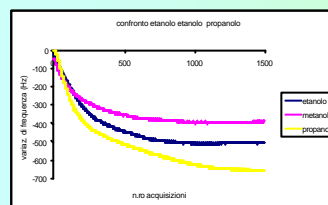
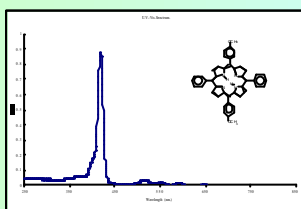
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QCM AND SPR MEASUREMENTS IN CONTROLLED ATMOSPHERE ON LB FILMS OF A DERIVATISED TETRAPHENIL PORPHIRIN.

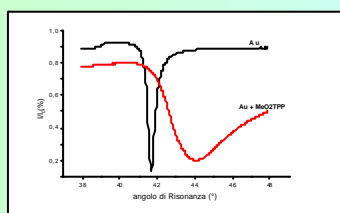
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Porphyrins have been introduced in recent years as sensitive active layers for the fabrication of selective sensors sensitive to volatile organic compounds. These materials are successfully utilised as sensor coating in gas-sensing applications. In this poster, both piezoelectric and optical sensors were used adevices employing such macrocyclic derivatives. Quartz crystal microbalance is a highly sensitive method for the detection of even traces of gases in the atmosphere and offers the chance for the development of effective system for identification and quantification of toxic chemical species.

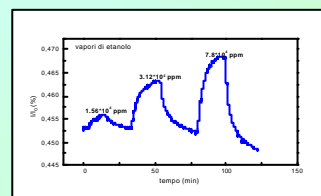
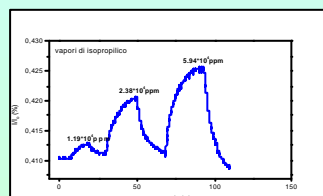
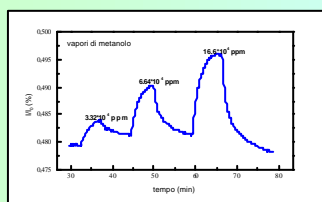


Moreover, new optical phenomena that can be employed in the refinement of gas identification have presently been aimed. For example, surface plasmon wave interaction method is clearly developing as an impressive method for gas detection. SPR-sensing devices are a convenient and low power technique that may be easily used instead of the usual resistive devices above all for the lack of electrical connections.



Sample	TEMPO DI RISPOSTA (min)		
	metanolo	etanolo	Isopropanolo
Au	12	18	20
Au + MeO ₂ TPP	4	9	11

Thin films of 5,15-di(p-methoxyphenoxy)-10,20-diphenoxy porphyrin (MeOTPP) were deposited on QMB crystals and Ag surface by the Langmuir-Blodgett technique. Such coatings were tested in the detection of alcohol vapours by using both techniques. Different responses for different alcohol molecules were found.



Conclusion.

I film utilizzati come strato attivo per determinare alcool tramite due differenti tecniche di trasduzione, la prima piezoelettrica (QCM), la seconda ottica (SPR). Hanno dato entrambe un risultato positivo per la determinazione di alcoli a catena corta. La tecnica SPR ha inoltre rilevato la sensibilità di tali film anche a piccole variazioni nelle concentrazioni dei vapori degli alcoli.