Toxic Gas Sensors Using Ionic Liquids

A.Nauber, P.Tschuncky; Draegerwerk ; Lübeck, Germany

As a global supplier for medical and safety technology, Dräger offers a wide variety of gas detection options in order to meet the needs of reliable detection of low level gas impurities in breathing air. From the well-established Dräger-Tubes to our new developments in sensor technology, gas sensors warn people of dangerous substances in the surrounding atmosphere.

Among the different gas detector principles, electrochemical sensors are key technology in Dräger products since many years and our research and development group continuously improves our technology. High quality, user friendliness and optimum performance are evaluated in terms of high sensitivity and selectivity to the gas being measured, combined with excellent long-term stability and fast reaction times. Our sensors ensure that the user receives immediate and reliable warning in the event of gas hazards.

Our sensors exhibit extreme rugged designs and are engineered to tolerate even the harshest environmental conditions. Therefore only highly stable materials can be used.

Ionic Liquids offer the advantages of displaying a huge electrochemical open window with negligible background currents. They can be designed task specific for the application they are used in and besides their outstanding chemical inertness they offer the intrinsic advantage of being nonvolatile, which makes it possible to construct sensors that even can be used under zero humidity conditions which e.g. can be found for H_2S monitoring in oil fields.

In our poster we want to present different examples for electrochemical gas sensors using Ionic Liquid as electrolytes.