

Application Trends, Technical
Requirements And Objectives Of Further
Development For Electronic Noses

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During the last decade, Electronic Noses (EN) have undergone a remarkable conversion from a sophisticated laboratory instrument for odor measurements only into a handy gas analytical tool of widespread applicability. Since the first EN was launched on the market in 1992, size, weight and price of the instruments have dramatically decreased and recently even the first handheld units with continuous output have become available. The simplicity of an EN based on gas sensor arrays and the progress made in microfabrication have offered the technical feasibility to follow this trend which will surely be continued in the future. Moreover, the growing awareness of the fact that an integral analysis of gas ensembles as performed by an EN is of versatile applicability, has come up to the expectations of an enormous market. Even fulfilling the extreme requirements for integration of EN modules into intelligent mass products concerning low price, small dimensions and low power consumption now seem to be feasible. However, the breakthrough to substantial sales has still not been reached yet. The application potentials of ENs, the requirements for their competitive use and the deficits of their current development state will be discussed. An attempt will be made to describe the bumpy road out of the niche market towards a widespread accepted instrument.