Abstract

From a technical and commercial point of view it is found that electronic sensing technologies have emerged significant progresses over the last few decades. The potentiality of reproducing human senses by sensor arrays and pattern recognition systems is termed as electronic sensing. E-Nose provides an industry-specific management resolution for the perpetual and real-time monitoring of environmental odor and air quality resulting in higher profit and improved community relations. The device constitutes arrays of effective and rapid acting chemical sensors, supplemented by patented electronics and software. Chemicals in the air are identified by the sensor arrays, registering complex odor images in real time. By means of wireless connection or lines a permanent record is sent to the computer, where it is detected, computed and alarms for inconsistent events were sent or else it can be indicated by some displacement. Electronic nose instruments are exploited by research and development laboratories, quality control laboratories, process & production department's of environmental protection, all these are done for the detection of volatile organic compounds in air, water and soil samples, and the measurement and comparison of the effects of manufacturing process on products are also determined. In this paper, An E-Nose is proposed
to identify the gas component. For this process, the soft computing technique called Genetic algorithm is used. This provides an optimized weight to identify the gas component by means of the input concentration range and SMAC/hr (units in ppm). The intended Technique is evaluated with different training samples and results are produced.

References


Index Terms

Computer Science
Algorithms
Formulating a Mathematical Model for the E-Nose Application through Genetic Algorithm (GA)

Keywords
Electronic nose  odor  electronic sensing  concentration range and SMAC  volatile organic compounds

Genetic algorithm (GA)