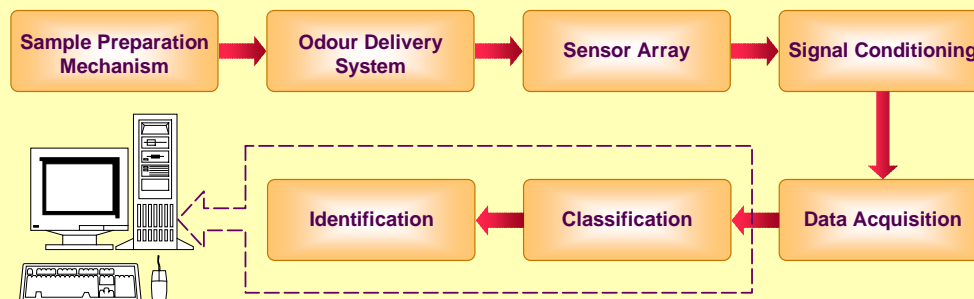# Electronic Nose for Quality Analysis of Aromatic Rice
~ A Complete Olfaction Machine for Aroma Monitoring ~

➢ **E**lectronic Nose is a scientific, reliable, repeatable, non-invasive and affordable technique for quality characterization of aroma.

Block diagram of Electronic Nose for Quality analysis of Aromatic Rice

Operating Principle:

❑ Electronic Nose senses complex odours using an Array of Sensors (called "sensor array"): each tuned for odour of a family of volatile compounds.

❑ Odour stimulus imprints a characteristic electronic pattern as fingerprint (or smell print) on sensor array.

❑ This smell print is statistically classified and resolved with suitable pattern recognition engine as a measurement of odour of the sample.

Temperature Bath for Sample preparation

Odour Delivery System

E-Nose System for Basmati Rice

System Features:

✓ Portable system for ease of field mobility.
✓ Temperature Bath with automatic temperature control.
✓ PC interfacing using USB port.
✓ Non-specific Array of Sensor (MOS based).
✓ GUI, Data Acquisition & Control.
✓ Instant data analysis with report generation.

Application:

❑ Identification of Aromatic Rice.
❑ Quantification of intensity of Aroma.
❑ Correlation with chemical properties of rice.
❑ Grading of different rice varieties.

About Basmati Rice Aroma:

❑ More than 100 volatile compounds in Basmati rice responsible for formation of sweet flavor. Most of them are hydrocarbons, acids, alcohols, aldehydes, ketons, esters, phenols etc.

❑ The main chemical compound, which is responsible for aroma of Basmati Rice, is *2-acetyl-1-pyrroline.*

❑ Emits a special type of smell during harvesting, in storage, milling process, cooking.