

Measurement of Olfaction Aerodynamics

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Reference: Olfaction Aerodynamics

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Overview

Auburn University is seeking a licensee or development partner for a system and method for observing, collecting and analyzing olfactory characteristics of human or animal subjects, such as sniffing, breathing and respiratory patterns and sounds. This data can then be compared to various standards, providing a quantitative tool to study breathing patterns and quality. This technology has potential applications in clinical diagnostics, research tools, and the evaluation and training of dogs for explosive and drug detection.

Advantages

- Accurately measures and records frequency and amplitude of breathing patterns, producing data that can then, for example, aid in medical diagnosis
- Simple system keeps manufacturing costs low
- Simple system helps to ensure subject compliance
- *Ex vivo* use allows for a quicker approval process

Description

Research indicates that the extraordinary sensitivity of canine olfaction is dependent in part upon complex aerodynamics, including sniffing frequency and directional control of expired air. Without appropriate aerodynamic sampling, this high level of sensitivity is not typically achieved.

This invention provides an apparatus and method for monitoring the aerodynamics of the nose and respiration of an animal and/or human subject. Various embodiments include an apparatus to detect airflow patterns in the nose -- which may be used to monitor both sniffing patterns and respiration -- and a method for attaching a miniature transmitting microphone to the nose of a subject to detect sounds resulting from sniffing patterns.

Potential applications for this technology include clinical diagnostics (by detecting altered breathing patterns tied to various diseases), training of dogs for detection (by matching an untrained dog's breathing pattern to known successful dogs), screening of candidates for certain professional positions (such as wine tasting), athletic training (by identifying and teaching breathing patterns for optimal performance) and medical devices to detect the possibilities of SIDS and sleep apnea.

Status

- Subject of issued U.S. Patent [6,979,298](#)
- Technology has been demonstrated with canine subjects

Licensing Opportunities

- This technology is available for exclusive or non-exclusive licensing in most fields of use
- This technology has been exclusively licensed for canine-based detection
- Joint development opportunities include funded research or a joint venture

