

# Adaptive Headgear to Suppress noise generated by dental equipment during procedure

## TECHNOLOGY:

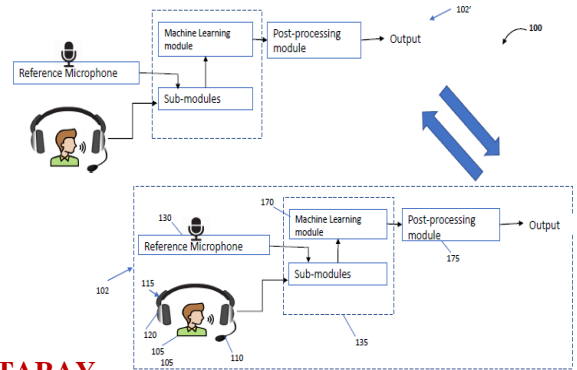
This is an adaptive Headgear leveraging the combined benefits of embedded audio processing, AI-enabled noise, and voice classification, and bi-directional communication for efficient noise suppression in dental procedures, ensuring comfort and safety for prolonged use

**Intellectual Property:**

**Indian Patent: 466369**

**Category of the invention:**

- ✓ Medical Devices
- ✓ Noise cancellation
- ✓ Artificial Intelligence



**Fig. Illustration of the noise-cancellation headphone system**

## INVENTOR:

**SWADHEENA PATRO**  
Bhubaneswar, Odisha, India

**SRUSTIJEET MISHRA**  
Bhubaneswar, Odisha, India

**SAMBIT PRASAD KAR**  
Cuttack, Odisha, India

**AMIYA KUMAR SAMANTARAY**  
Nayagarh, Odisha, India

## PROBLEM ADDRESSED

- ✓ High-frequency noise generated by dental drills causes discomfort to both patients and dentists.
- ✓ Prolonged exposure to dental drill noise poses risks to the hearing health of both patients and dentists.
- ✓ Anxiety levels can increase in patients due to the loud noise, affecting their overall dental experience.
- ✓ Dentists may experience fatigue or hearing loss over time due to continual exposure to the noise.
- ✓ Conventional methods of noise control may not effectively address the specific frequencies and variations of dental drill noise.

## ADVANTAGE

- ✓ Reduced patient anxiety and improved experience: Creates a calmer environment leading to better cooperation and potentially shorter procedures.
- ✓ Enhanced hearing protection for dentists: Effectively reduces harmful high-frequency noise, safeguarding dentists' hearing health.
- ✓ Increased efficiency and productivity: Enables better focus for both dentist and patient, potentially leading to faster and more efficient procedures.
- ✓ Unique multi-method noise cancellation: Combines passive, adaptive, and active cancellation with filtering to specifically target dental drill noise.
- ✓ Machine learning integration for personalized experience: Adapts to various drill sounds and ambient noise for effective and personalized noise reduction

## POTENTIAL VALUE:



Source: Stringent Datalytics      Source: .verifiedmarketresearch.com

## USP:

- ✓ Tailored noise cancellation targeting dental drill noise.
- ✓ Personalized noise reduction using machine learning.
- ✓ Enhanced efficiency and productivity in dental procedures.
- ✓ Optimal hearing protection for dentists.
- ✓ Improved patient cooperation and experience.

## Reach Us:

**Dr. Amaresh Panda**  
Lead, Technology Transfer Office, KIIT-TBI  
amaresh@kiitincubator.in | +91-9819053408

**Dr. Samuel Rout**  
Manager, Technology Transfer Office, KIIT-TBI  
samuel@kiitincubator.in | +91-7735389456

tto@kiitincubator.in | tto.kiitincubator.in