

## Alveolar Breath Separation and Collection Device (#4734)

A simple and inexpensive device for the diagnosis of pneumonia

Inventors at Georgia Tech and the CDC have developed a simple device for pneumonia diagnosis. The objective of this device is to provide a segregated sampling of the aerosol from the lower airway and the alveolar space through the combination of a single elastic bag and separate filter or detector. This minimizes the amount of contaminants from saliva and mucus collected from the oropharyngeal cavity, requiring no power, active valves, or secondary apparatus.

### Benefits/Advantages

- **Simple:** this device has fewer components than prior devices
- **Inexpensive:** this device is less expensive than previous devices due to its simpler design

### Potential Commercial Applications

- Pneumonia diagnosis
- EtOH detection
- Cancer cell sampling
- Lower airway content sampling

### Background/Context for This Invention

Pneumonia has a number of causes, including viruses, bacteria, and fungi. To treat this condition appropriately, it is necessary to identify the pathogen in the lower airway. This can be done by checking for the presence of the pathogen, virus, bacteria or fungus, in the lungs. In the United States there are around 10 million affected patients per year, and the World Health Organization estimates there are approximately 2 million deaths in children under 5 years of age from pneumonia. Obtaining a clean sample from the lung and confirming the diagnosis of pneumonia is difficult because of oral contaminants, therefore doctors need a simple way to collect a clean sample from the lower airway and alveoli.

**Dr. David Ku**

Regents' Professor - Georgia Tech School of Mechanical Engineering

**Larry Anderson**

Director, Division of Viral Diseases – Center for Disease Control and Prevention

**Prem Midha**

Graduate Research Assistant - Georgia Tech School of Mechanical Engineering

**Harris Bergman**

President - Amigent Inc.

**Tamera Scholz**

Research Assistant - Georgia Tech School of Mechanical Engineering

**Patent/IP Information****U.S. Patent Issued**

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<https://patents.google.com/patent/US8821409B2/en?q=8821409>

**Publications**

**For more information about this technology, please visit:**

<https://licensing.research.gatech.edu/technology/alveolar-breath-separation-and-collection-device>