

## Desorption Electrospray Ionization Probe Chemical and Biological Analysis

**Track Code:** 65914

**Categories:**

- Chemistry and Chemical Analysis

**Keywords:**

- Chemistry and Chemical Analysis
- Mass Spectrometry

Desorption Electrospray Ionization (DESI) is a recently developed ambient ionization technique that can be used in mass spectroscopy (MS) for ambient chemical and biological analysis. DESI is capable of generating ions of analytes in raw samples with no separation and minimal sample preparation. DESI has been applied for tissue imaging, but only in biopsied samples.

Researchers at Purdue have developed an ambient DESI probe with the potential to be deployed via catheter for in vivo sampling of biological samples. This probe is directly connected to the mass spectrometer via a length of tube, and the additional length of the tube has been shown to encourage desolvation of droplets and generation of ions for MS analysis. By using water instead of solvent-containing solutions, this device is capable of safely sampling biological surfaces.

**Advantages:**

- In vivo sampling
- Non-hazardous sampling of biological surfaces

**Potential Applications:**

- Chemical Analysis

**People:**

- Cooks, Robert Graham (Project leader)
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- Eberlin, Livia Schiavinato
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**Intellectual Property:**

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**Country of Filing:** United States  
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**Country of Filing:** United States  
**Patent Number:** 10,799,165  
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**Type:** CON-Patent  
**Country of Filing:** United States  
**Patent Number:** 10,555,694  
**Issue Date:** February 11, 2020

**Application Date:** January 15, 2019  
**Type:** CON-Patent  
**Country of Filing:** United States  
**Patent Number:** 10,420,495  
**Issue Date:** September 24, 2019

**Application Date:** May 25, 2018  
**Type:** CON-Patent  
**Country of Filing:** United States  
**Patent Number:** 10,213,143  
**Issue Date:** February 26, 2019

**Application Date:** June 8, 2017  
**Type:** CON-Patent  
**Country of Filing:** United States  
**Patent Number:** 10,004,440  
**Issue Date:** June 26, 2018

**Application Date:** January 6, 2017  
**Type:** CON-Patent  
**Country of Filing:** United States  
**Patent Number:** 9,700,251  
**Issue Date:** July 11, 2017

**Application Date:** April 16, 2015  
**Type:** CON-Patent  
**Country of Filing:** United States  
**Patent Number:** 9,538,945  
**Issue Date:** January 10, 2017

**Application Date:** June 1, 2012

**Type:** Utility Patent  
**Country of Filing:** United States  
**Patent Number:** 9,024,254  
**Issue Date:** May 5, 2015

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