

## Title (en)

Three-dimensional molecular imaging by infrared laser ablation electrospray ionization mass spectrometry

## Title (de)

Dreidimensionale molekulare Bildgebung mittels Infrarot-Laserablation-Elektrospray-Ionisation-Massenspektrometrie

## Title (fr)

Imagerie moléculaire tridimensionnelle par spectrométrie de masse à ionisation par électronébulisation à ablation par laser infrarouge

## Publication

**EP 2660848 A1 20131106 (EN)**

## Application

**EP 13170238 A 20091125**

## Priority

- US 32327608 A 20081125
- US 26411909 P 20091124
- EP 09832362 A 20091125

## Abstract (en)

The field of the invention is atmospheric pressure mass spectrometry (MS), and more specifically a process and apparatus which combine infrared laser ablation with electrospray ionization (LA-ESI). The device has a three-dimensional scanning apparatus for lateral scanning of points on the live tissue or cell sample, and for depth profiling of each point on the sample by performing ablations at each point. The laser pulse has a wavelength of about 2.9  $\mu\text{m}$  for desorbing samples with high water content.

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## CPC (source: EP)

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## Citation (search report)

- [A] US 2005035284 A1 20050217 - SCHULTZ J ALBERT [US], et al
- [A] DE 10310518 A1 20041014 - TRANSMIT TECHNOLOGIETRANSFER [DE]
- [ADP] US 2009272892 A1 20091105 - VERTES AKOS [US], et al
- [A] US 2005230615 A1 20051020 - FURUTANI HIROSHI [US], et al
- [XI] PETER NEMES ET AL: "Ambient Molecular Imaging and Depth Profiling of Live Tissue by Infrared Laser Ablation Electrospray Ionization Mass Spectrometry", ANALYTICAL CHEMISTRY, vol. 80, no. 12, 1 June 2008 (2008-06-01), pages 4575 - 4582, XP055024857, ISSN: 0003-2700, DOI: 10.1021/ac8004082
- [A] "Generation of three-dimensional images in mass spectrometry", 16 May 2003 (2003-05-16), XP055024986, Retrieved from the Internet <URL:http://www.hipo-online.de/files/Exp\_Hipo\_3D\_MS\_EN\_160503.pdf> [retrieved on 20120419]
- [XP] PETER NEMES ET AL: "Three-Dimensional Imaging of Metabolites in Tissues under Ambient Conditions by Laser Ablation Electrospray Ionization Mass Spectrometry", ANALYTICAL CHEMISTRY, vol. 81, no. 16, 15 August 2009 (2009-08-15), pages 6668 - 6675, XP055024885, ISSN: 0003-2700, DOI: 10.1021/ac900745e

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