



Library Indian Institute of Science Education and Research Mohali



DSpace@IISERMohali (/jspui/)
/ Publications of IISER Mohali (/jspui/handle/123456789/4)
/ Research Articles (/jspui/handle/123456789/9)


Please use this identifier to cite or link to this item: <http://hdl.handle.net/123456789/2852>

Title:	Atmospheric benzenoid emissions from plants rival those from fossil fuels(Article)(Open Access)
Authors:	Sinha, V. (/jspui/browse?type=author&value=Sinha%2C+V.)
Keywords:	emissions plants rival fossil fuels
Issue Date:	2015
Publisher:	Nature Publishing Group
Citation:	Scientific Reports, 5
Abstract:	Despite the known biochemical production of a range of aromatic compounds by plants and the presence of benzenoids in floral scents, the emissions of only a few benzenoid compounds have been reported from the biosphere to the atmosphere. Here, using evidence from measurements at aircraft, ecosystem, tree, branch and leaf scales, with complementary isotopic labeling experiments, we show that vegetation (leaves, flowers and phytoplankton) emits a wide variety of benzenoid compounds to the atmosphere at substantial rates. Controlled environment experiments show that plants are able to alter their metabolism to produce and release many benzenoids under stress conditions. The functions of these compounds remain unclear but may be related to chemical communication and protection against stress. We estimate the total global secondary organic aerosol potential from biogenic benzenoids to be similar to that from anthropogenic benzenoids (~10 Tg y ⁻¹), pointing to the importance of these natural emissions in atmospheric physics and chemistry.
Description:	Only IISERM authors are available in the record.
URI:	https://www.nature.com/articles/srep12064 (https://www.nature.com/articles/srep12064) http://hdl.handle.net/123456789/2852 (http://hdl.handle.net/123456789/2852)
Appears in	Research Articles (/jspui/handle/123456789/9)
Collections:	

Files in This Item:

File	Description	Size	Format	
Need to add pdf.odt (/jspui/bitstream/123456789/2852/1/Need%20to%20add%20pdf.odt)		8.63 kB	OpenDocument Text	View/Open (/jspui/bitstream/123456789/2852/1/Need%20to%20add%20pdf.odt)

Show full item record (/jspui/handle/123456789/2852?mode=full)

 (/jspui/handle/123456789/2852/statistics)

Items in DSpace are protected by copyright, with all rights reserved, unless otherwise indicated.

