



SDI Review Form 1.6

Journal Name:	<u>British Journal of Applied Science & Technology</u>
Manuscript Number:	2014_BJAST_10782
Title of the Manuscript:	A Review of Household Spraying Consumer Products Induced Secondary Organic Aerosols in the Indoor Environment
Type of the Article	Review Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	1) Gas-Particle partitioning of SOA precursors is an important step in SOA formation. This aspect is not adequately addressed in this review (Section 2.5). We strongly suggest that the thermodynamic aspects of gas-particle partitioning need be discussed. These include classical work done by Odum et al. and Pankow et al. (Pankow, James F. "An absorption model of the gas/aerosol partitioning involved in the formation of secondary organic aerosol." Atmospheric Environment 28.2 (1994): 189-193.) and other latest works. 2) Line 93 says "VOCs emitted from the use of consumer spraying products are referred to as Primary Organic Aerosols (POA)". This statement is not accurate. POA is aerosol particles that are emitted directly from the source and are typically considered non-volatile and non-reactive. This statement needs to be corrected. 3) The review should discuss the current state of science of measuring the yield of SOA precursors present in indoor environment including chamber experiments. For example, studies by X Chen et al (Chen, X. and Hopke, P. K. (2010), A chamber study of secondary organic aerosol formation by limonene ozonolysis. Indoor Air, 20: 320-328. doi: 10.1111/j.1600-0668.2010.00656.x) and others that have studied SOA formation in a controlled environment and measured the yields. We strongly suggest authors should include a section or at least a paragraph describing results from these studies. 4) The review should also discuss current state of science on modelling the yield of SOA from precursors present in the indoor environment.	Reference to Pankow work and others have been made in the manuscript. It has been corrected. Some of the chamber experiments are summarized in Table 4



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		Some of the recent studies on SOA formation and yield are now included in Table 4
<u>Minor</u> REVISION comments	1) The review also doesn't adequately address the size distribution of SOA. Since the size of particles are important from health impact perspective, authors should consider including latest understanding on the size distribution of SOA. 2) The caption for Figure 1 doesn't adequately describe the result presented. The caption should describe the conditions data was collected under (chamber experiment? Indoor monitoring?) and explain the effect of Ozone on SOA levels. 3) The manuscript requires additional proof-reading to avoid repeating some statements. For example, SOA is defined at multiple places in Section 2.3, at the end of Section 2.1, 4) Sentence starting at line 147 should name the author. It directly starts with the reference. 5) Photo-chemical should be written as one word (Photochemical) in line 99 6) We suggest Section 2.1 may be better titled as 'VOCs in Indoor Environment' than 'Organic Compounds in Indoor Environment'. 7) Manuscript should be checked for spelling errors and omitting of spaces between words.	This has been captured in the manuscript. This has been done. This has been corrected It has been corrected It has been corrected Spelling errors have been checked
<u>Optional/General</u> comments		