Atmos. Chem. Phys. Discuss., 5, S1903–S1905, 2005
www.atmos-chem-phys.org/acpd/5/S1903/
European Geosciences Union

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Coagulation of combustion generated nanoparticlesand their measurement behind vehicle engines:can they play a role as atmospheric pollutants?" *by* H.-H. Grotheer et al.

Anonymous Referee #4

Received and published: 3 August 2005

The response of the first author has not disproved the key points of my critical review. I will briefly comment on the four examples that were discussed in detail.

Example 1: Consider again the two sentences: "It remains a research question how the size of combustion generated particles affects their toxicity. However, both the small size and affinity for water of the d = 2-4 nm particles are characteristics which allow them to be easily uptaken and transported through the body." The first sentence expresses a complete lack of understanding how particles may cause health effects.

The second contains the speculation that the cited particle properties could facilitate particle transport through the body. But experimental evidence is not provided. If reference is made to this lack of information by stating “This (high number) then may lead to health effects which may be even enhanced through the water-solubility of these particles”, the unbiased reader expects something more than merely a repetition of speculations. In my opinion the statement misleadingly serves to prove the relevance of the study.

Example 2: Figure 1 was copied without explicitly saying so, as I stated before. “Inappropriate scientific practise” is a mild form of criticism.

Example 3: The author concedes that the description of the immediate expansion is an “euphemism”. But there is no response to several other important issues of my criticism.

Example 4: In the paper it was said that “The exhaust gas measurements of this paper were mostly carried out under conditions of fragmentation as we were not aware of the described photo-ionisation effects.” However, in the description of the additional results, the aspect of fragmentation is not discussed any further, even though the measured mass spectra are dominated by these laser-power dependent artefacts. The desired information on the composition of the exhaust gases could not be obtained. Now the author states that system performance has been explored in more detail so that “the laser can be operated under safe conditions (ie small fragmentation, if any). In this case we get a fully developed nanoparticle spectrum which for mass $<$ 1500 u shows a PAH pattern”. This sounds interesting and I would clearly like to convince myself that this message is sound. On the other hand, the question arising immediately is: Why should spectra be published that are known to suffer from severe artefacts, notably those for the exhaust gases from vehicle engines? The readers of ACP as well as of other journals want to see the good data, not the bad.

The most important questions a scientist should always ask himself or herself before

ACPD

5, S1903–S1905, 2005

starting to prepare a manuscript is whether and in which sense the measured data are solid and whether they will be of any interest to the scientific community at all. As far as this paper is concerned my answer to the question is still no.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 3847, 2005.