

4F02: STRUCTURE-PROPERTY RELATIONSHIP IN NANOSTRUCTURES OF YOUNG AND MATURE SOOT IN PREMIXED FLAMES.

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**Comment by Brian Haynes, University of Sydney, Australia**

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The different flames you have compared were at rather different temperatures. They also had a wide range of soot volume fractions. Is it possible that some of the fuel effects you have identified were in fact confounded by these other variations?

**Reply by Anna Ciajolo**

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The maximum temperatures of the investigated flames, corrected for the radiative losses are 1650 K (methane/O<sub>2</sub>), 1670 K (ethylene/O<sub>2</sub>), 1835 K (benzene/air) and 1748 K (cyclohexane/O<sub>2</sub>/N<sub>2</sub>). Indeed the differences in the flame temperature as well as the different soot volume fraction can also affect soot structures. However, the maximum temperature difference is less than 200 K and different soot nanostructures have been found to arise when the synthesis temperatures differ at least of 400 K ([16] in the paper). On our knowledge there are no experimental studies focused on the effect of the temperature and of soot volume fraction on the nanostructure of flame-formed soot. Further experimental work is underway in order to clarify the temperature and soot volume fraction effects.