

Master Project

Design of a standard flame for assessing the spatial resolution in flame emission tomography

Flame emission tomography combines Computed Tomography (CT) with different types of emission measurements, such as chemiluminescence, to produce 3D reconstructions of the flame. The flame tomography community is continuously looking for the best way to determine the spatial resolution achievable in the reconstructions. The aim of this project is to design, build and test a special burner that incorporates a range of steady flame sizes within one. The burner design should premix the fuel (methane) and oxidiser (air). The burner should be tested with the existing tomography setup in the group. The results from this project will have a very high chance of being published in a peer-reviewed scientific journal. The candidate should have an engineering or design background. Previous experience with flames will be highly beneficial.

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Image of the existing tomography setup around a burner.