Corrigendum to "An experimental and kinetic modeling study of n-butanol combustion" [Combust. Flame 156 (2009) 852–864]

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Corrigendum

Corrigendum to "An experimental and kinetic modeling study of *n*-butanol combustion" [Combust. Flame 156 (2009) 852–864]

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This corrigendum corrects the flow boundary conditions for the opposed-flow diffusion flame experiments and, consequently, Fig. 7 appearing on page 862. In Section 2.2, the opposed-flow diffusion flame setup description should read:

"A fuel mixture of 94.11% N_2 and 5.89% fuel (99% pure n-butanol or 99% pure n-butane) was fed through the bottom port at a mass flux rate of 0.0131 g/cm^2-sec, while an oxidizer mixture of 42.25% O_2 and 57.75% N_2 was fed through the top port at a mass flux rate of 0.0126 g/cm^2-sec. At these plug flow conditions, the Reynold's Number is in the laminar flow regime (i.e. Re < 400), the flame is on the fuel side of the stagnation plane, and the fuel side strain rate is approximately 33 s^{-1}."

These correct flow boundary conditions change the model predicted species profiles in Figure 7, and the corrected figure appears here. The predicted reaction zone is now narrower, but the model's ability to reproduce the position and height of experimental profiles not changed significantly. Therefore, the discussion, rate of production analysis, and sensitivity analysis in the original manuscript remain valid.

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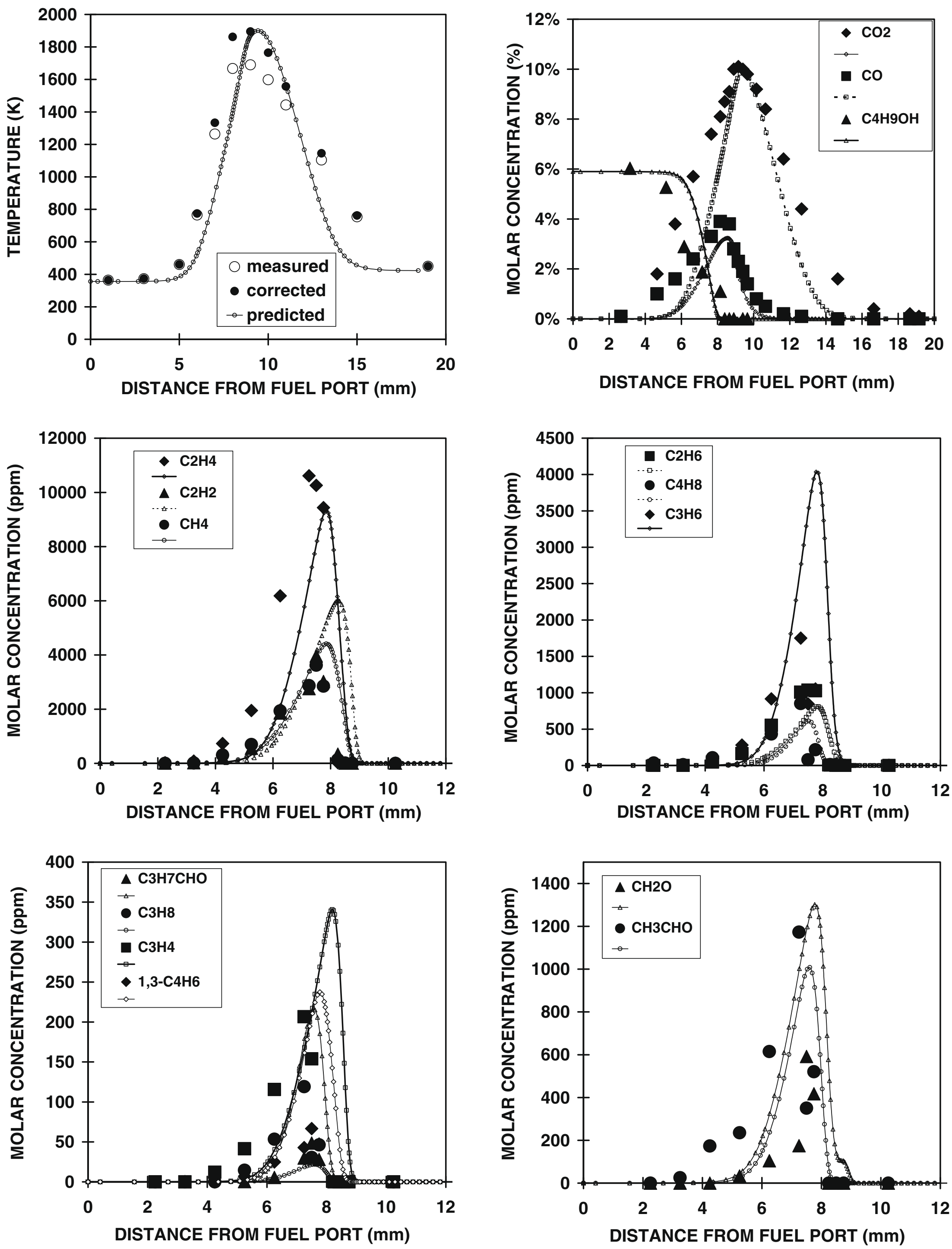

Fig. 7. Experimental and computed profiles obtained from the oxidation of n-butanol in an atmospheric opposed-flow flame (5.89% C_4H_9OH, 42% O_2).