## Supplementary data

For each of the case, the two principal curvatures:  $k_1$  and  $k_2$  and the two parameters to characterise reactivity: thickness and maximum intensity along the normal to the contour have been plotted along the flame contour.

Case 1: φ=1.0

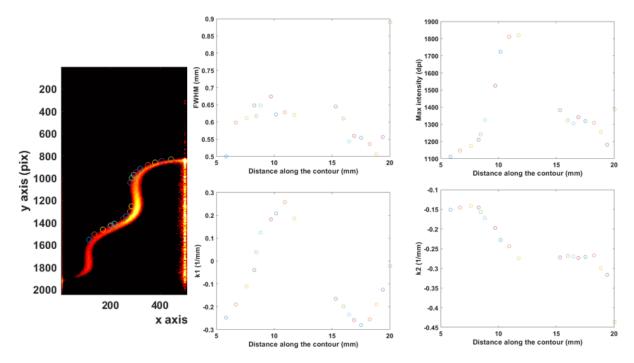


Figure 1: Curvature and reactivity plotted along the flame contour for  $\varphi$ =1.0.

Case 2: φ=1.1

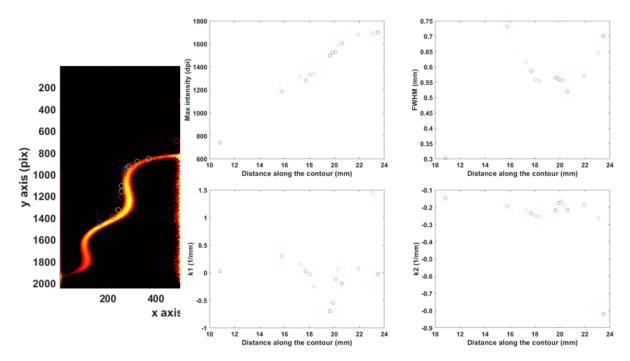


Figure 2: Curvature and reactivity plotted along the flame contour for  $\phi{=}1.1.$  Case 3:  $\phi{=}1.2$ 

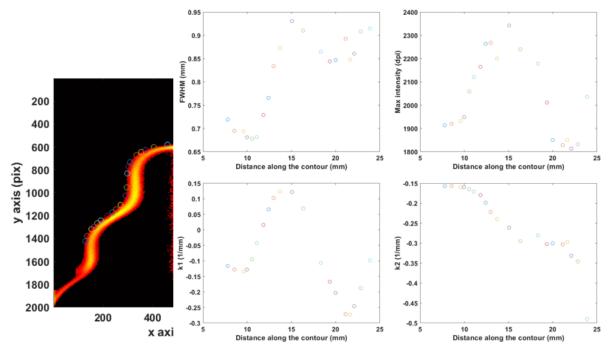


Figure 3: Curvature and reactivity plotted along the flame contour for  $\phi$ =1.2.

Case 4:  $\phi = 1.3$ 

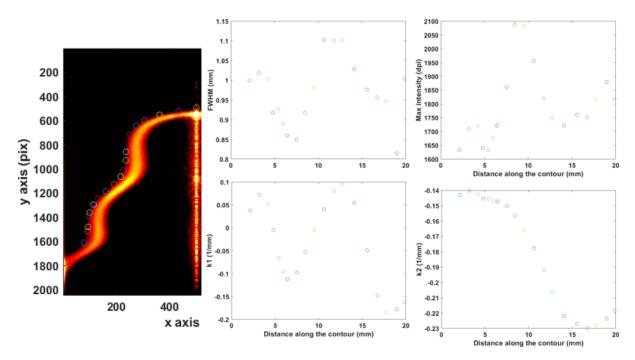


Figure 4: Curvature and reactivity plotted along the flame contour for  $\phi$ =1.3. Case 5:  $\phi$ =1.4

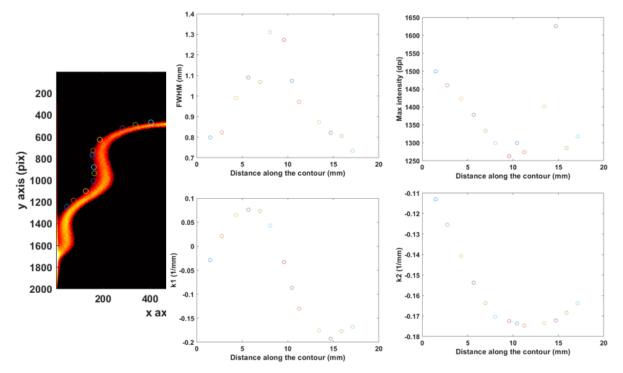


Figure 5: Curvature and reactivity plotted along the flame contour for  $\varphi$ =1.4.