

Supplementary Information

Title

HIGH POWER ULTRASOUND COMBINED WITH SUPERCRITICAL CARBON DIOXIDE FOR THE DRYING AND MICROBIAL INACTIVATION OF CORIANDER

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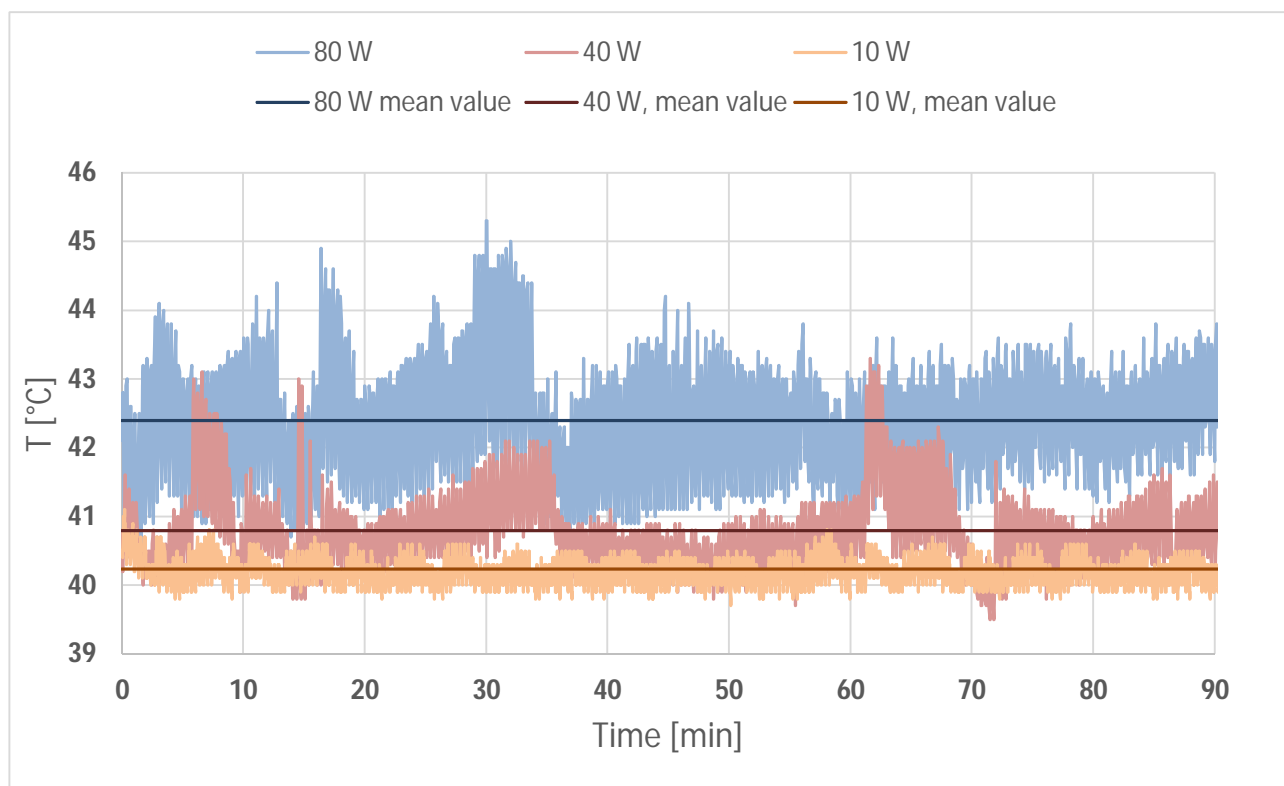
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Supplementary Fig. S1



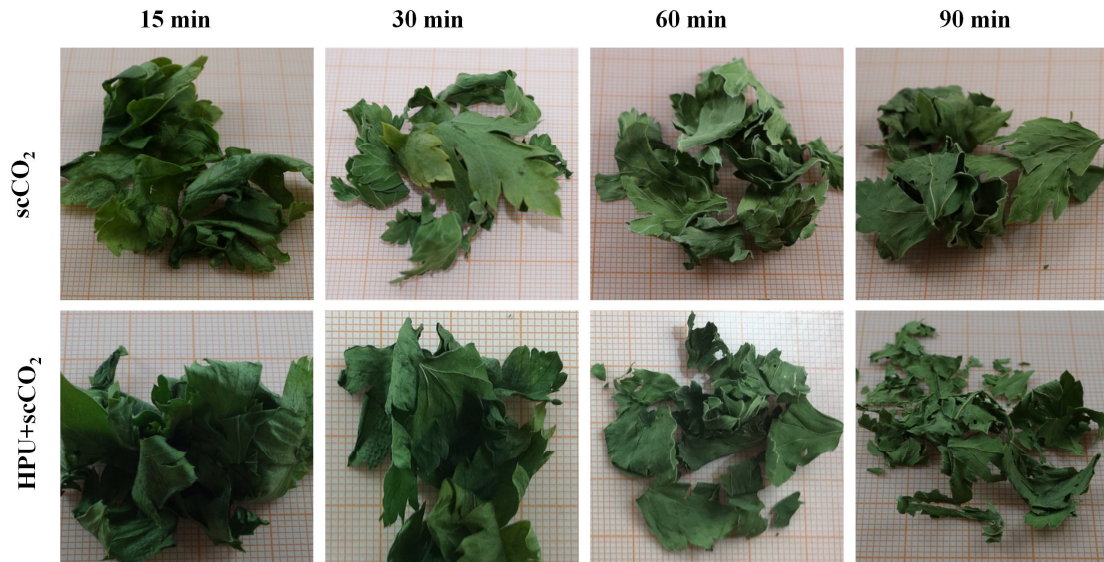
Picture of the HPU+scCO₂ drying reactor. High pressure reactor with the sonotrode; the drying chamber is highlighted in red, while the HPU sonotrode in yellow.

Supplementary Fig. S2



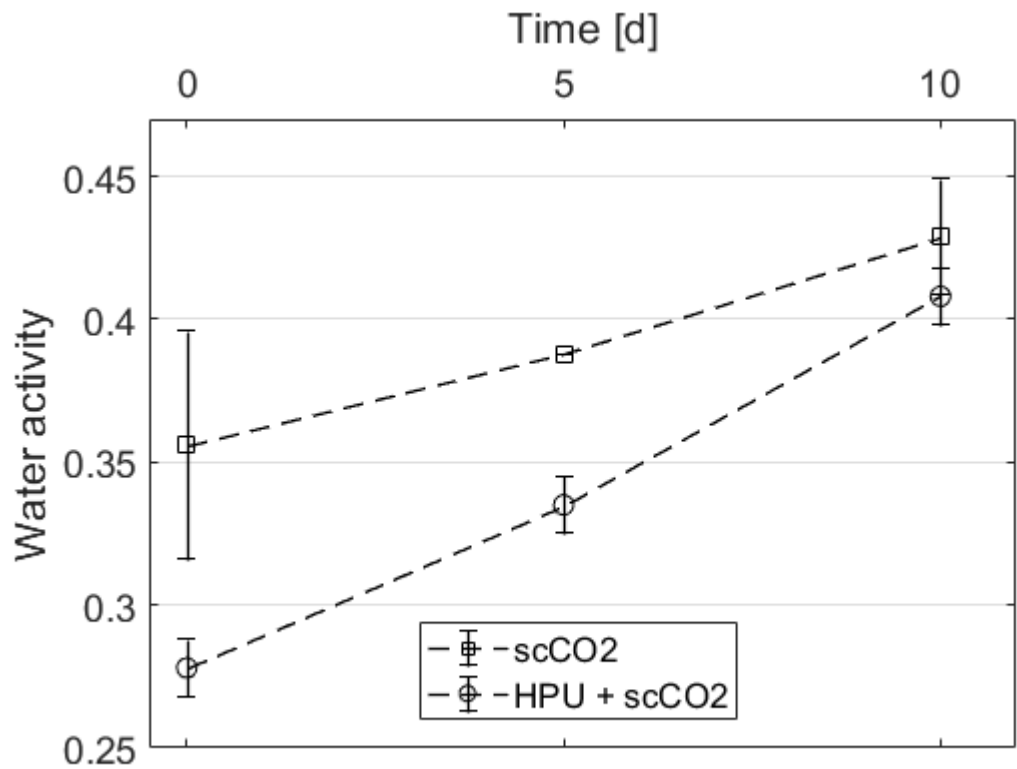
Temperature profile during HPU treatment. Temperature profile measured at the bottom of the vessels during HPU application. Experimental and average value during the 90 min process at different Powers (blue: 80 W; red: 40 W; orange: 10 W).

Supplementary Fig. S3



Imagines of fresh and dried coriander. Comparison between coriander leaves after $scCO_2$ process alone and in combination with HPU at different drying times (15, 30, 60 and 90 min). Process conditions used were 40°C, 10 MPa, 90 min, with or without 40W HPU.

Supplementary Fig. S4



Water activity during accelerated shelf life. Water activity immediately after drying (day 0) and after 5 and 10 days of storage at 30°C in N₂ atmosphere. The two drying processes were supercritical CO₂ alone (scCO₂) and in combination with HPU at 40W. Samples were dried at 100bar, 40°C and 90 min.

Supplementary Table. S1

Color analysis during accelerated shelf life. $L^* a^* b^*$ values for the dried coriander after $scCO_2$ and $scCO_2+HPU$ processes at different storage times: T_1 (after 5 days); T_2 (after 10 days) at $30^\circ C$. ΔE refers to the color change between the dried product without and with HPU.

	Time	L^*	a^*	b^*	ΔE
scCO ₂ dehydrated coriander	T ₁	73.4 ± 2.2	-6.1 ± 1.0	37.4 ± 2.3	3.9 ± 5.7
	T ₂	65.2 ± 4.4	2.4 ± 0.8	34.8 ± 2.6	9.3 ± 4.2
scCO ₂ + HPU dehydrated coriander	T ₁	65.3 ± 1.1	-5.1 ± 0.2	31.9 ± 4.1	3.6 ± 2.9
	T ₂	69.4 ± 4.3	-3.2 ± 1.4	33.1 ± 3.1	3.3 ± 6.2