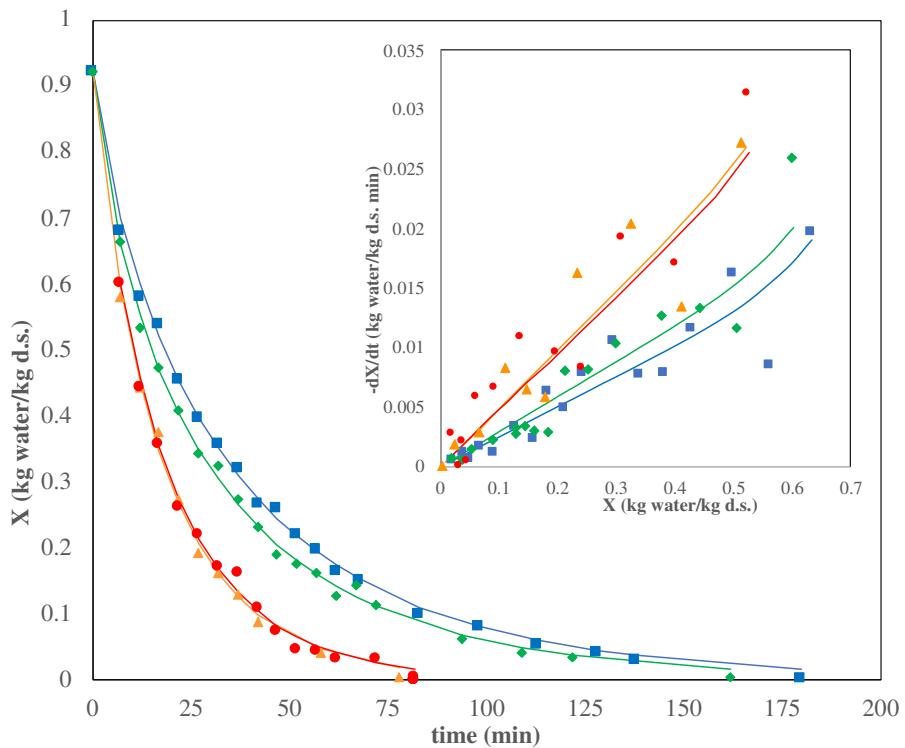


## **Supplementary Material**

### **Chitosan-based oleogels: emulsion drying kinetics modelling and physical, rheological and textural characteristics of olive oil oleogels**

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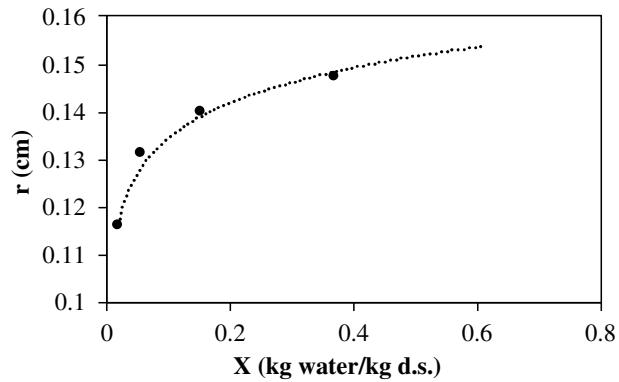
## 1. Drying kinetics of 0.7% w/w chitosan emulsions



**Figure S1.** Drying kinetics (main plot) and specific drying rates (subplot) at different air temperatures (°C): (50 ■, 60 ▲, 70 ▲, 80 ●) for the 0.7% w/w chitosan emulsions. Lines corresponded to the Page model prediction (main plot) and the diffusional model (subplot)

## 2. Thickness variation during drying

In Figure S.2, the shrinking of a system can be determined by a logarithmic relationship between thickness and moisture.



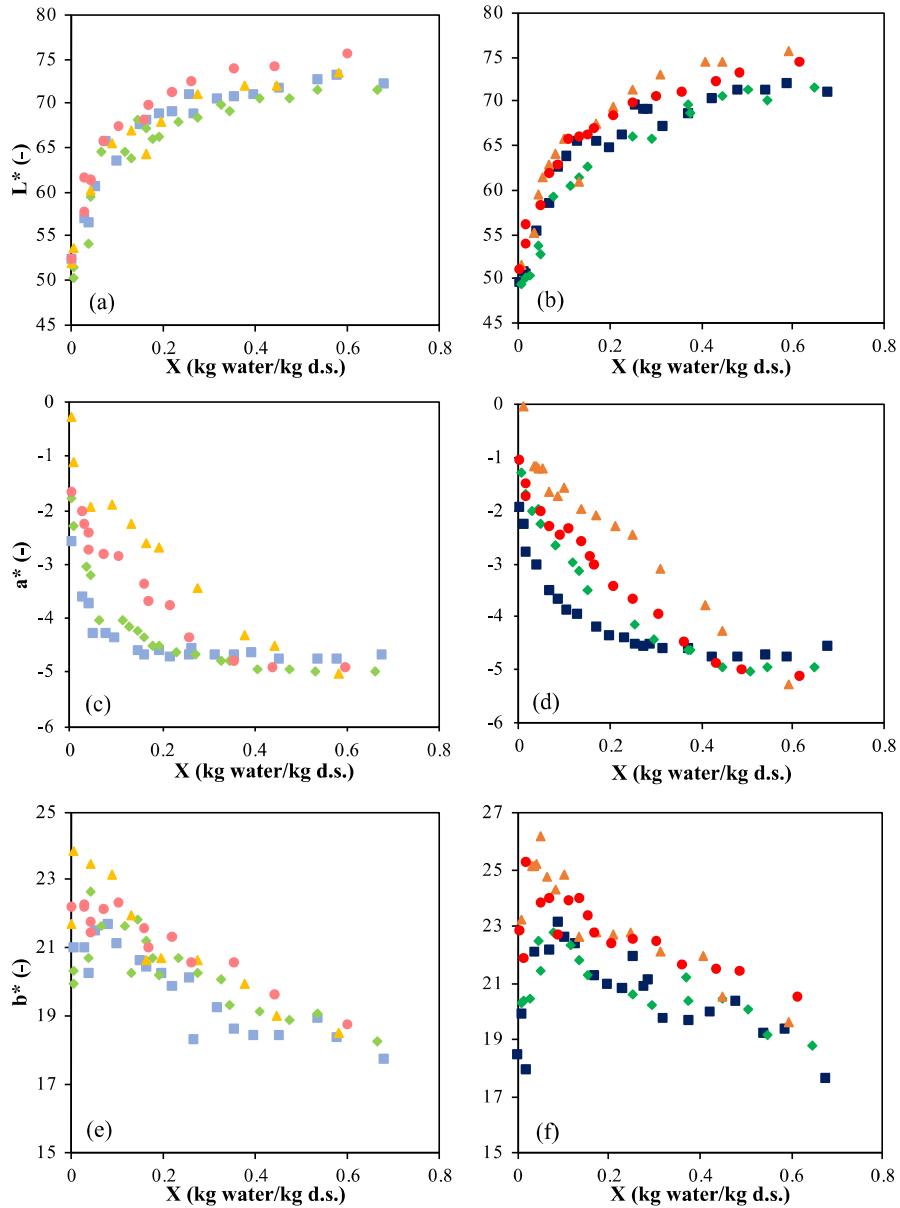
**Figure S2.** Logarithmic relationship thickness vs moisture for the system 0.7% chitosan and 70°C

This relationship is defined by Eq. S.1:

$$r(X) = 0.0107 \ln(X) + 0.159$$

Where  $r$  is the thickness in m and  $X$  is the absolute moisture (kg water/kg d.s.). Fitting present an  $R^2=0.979$  and a RMSE of 0.00575.

### 3. Color



**Figure S3:** Color coordinates trend with drying time at different air temperatures (°C): (50 ■, 60 ♦, 70 ▲, 80 ●) for the 0.8% w/w chitosan emulsions (clearer colors for 0.7% w/w). (a), (b) Brightness coordinate ( $L^*$ ); (c), (d) red-green coordinate ( $a^*$ ); (e), (f) yellow-blue coordinate ( $b^*$ ).

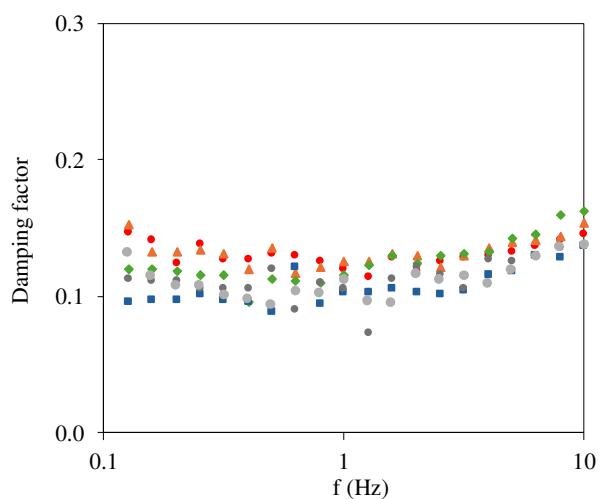
**Table S1.** Initial values of color coordinates ( $L^*$ ,  $a^*$ ,  $b^*$ ) for all the tested systems. FD (Freeze-drying)

Coordinate	$L^*$	$a^*$	$b^*$
<b>Sample</b>			
50°C – 0.7%	72.38 ± 0.94	-4.26 ± 0.08	16.58 ± 0.82
50°C – 0.8%	72.78 ± 1.27	-4.11 ± 0.09	16.57 ± 0.69
60°C – 0.7%	71.12 ± 1.05	-4.36 ± 0.10	15.74 ± 0.87
60°C – 0.8%	73.44 ± 0.98	-4.48 ± 0.05	17.15 ± 0.56
70°C – 0.7%	74.15 ± 2.74	-4.50 ± 0.07	16.17 ± 0.44
70°C – 0.8%	77.99 ± 1.21	-4.75 ± 0.09	16.97 ± 0.70
80°C – 0.7%	76.68 ± 1.13	-4.43 ± 0.08	17.12 ± 0.67
80°C – 0.8%	76.20 ± 0.53	-4.66 ± 0.04	19.18 ± 0.36
FD – 0.7%	73.28 ± 1.03	-4.35 ± 1.03	17.26 ± 0.52
FD – 0.8%	76.68 ± 1.11	-4.43 ± 1.11	17.12 ± 0.68



**Figure S4.** Freeze-dried sample with 0.7% chitosan after 48h storage.

#### 4. Rheological properties



**Figure S5.** Viscous-elastic moduli ratio ( $G''/G'$  = damping factor) with frequency of tested oleogels at different air temperatures (°C): (50 ■, 60 ♦, 70 ▲, 80 ●) and freeze-dried (●) for the 0.8% w/w chitosan emulsions (clearer colors for 0.7% w/w).