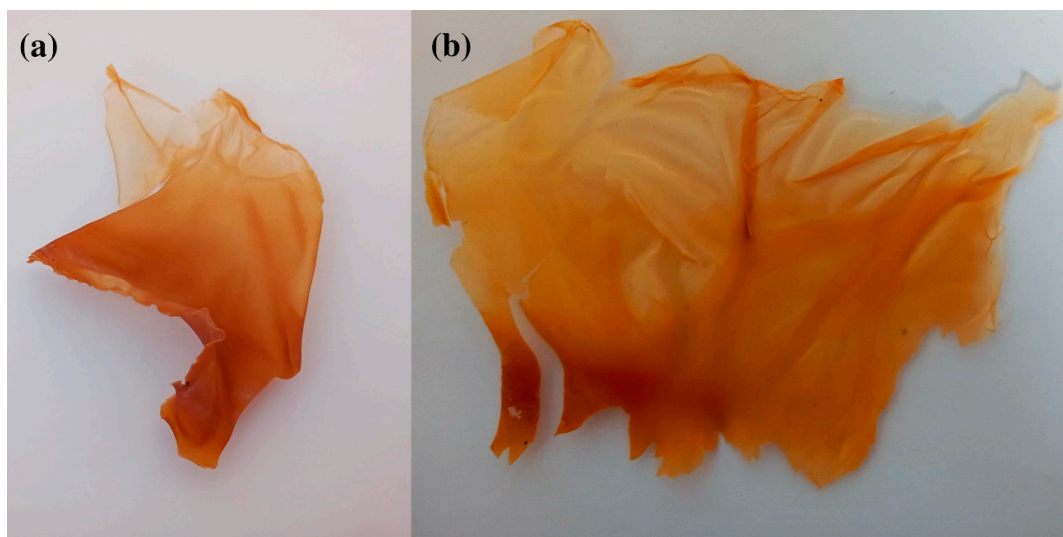
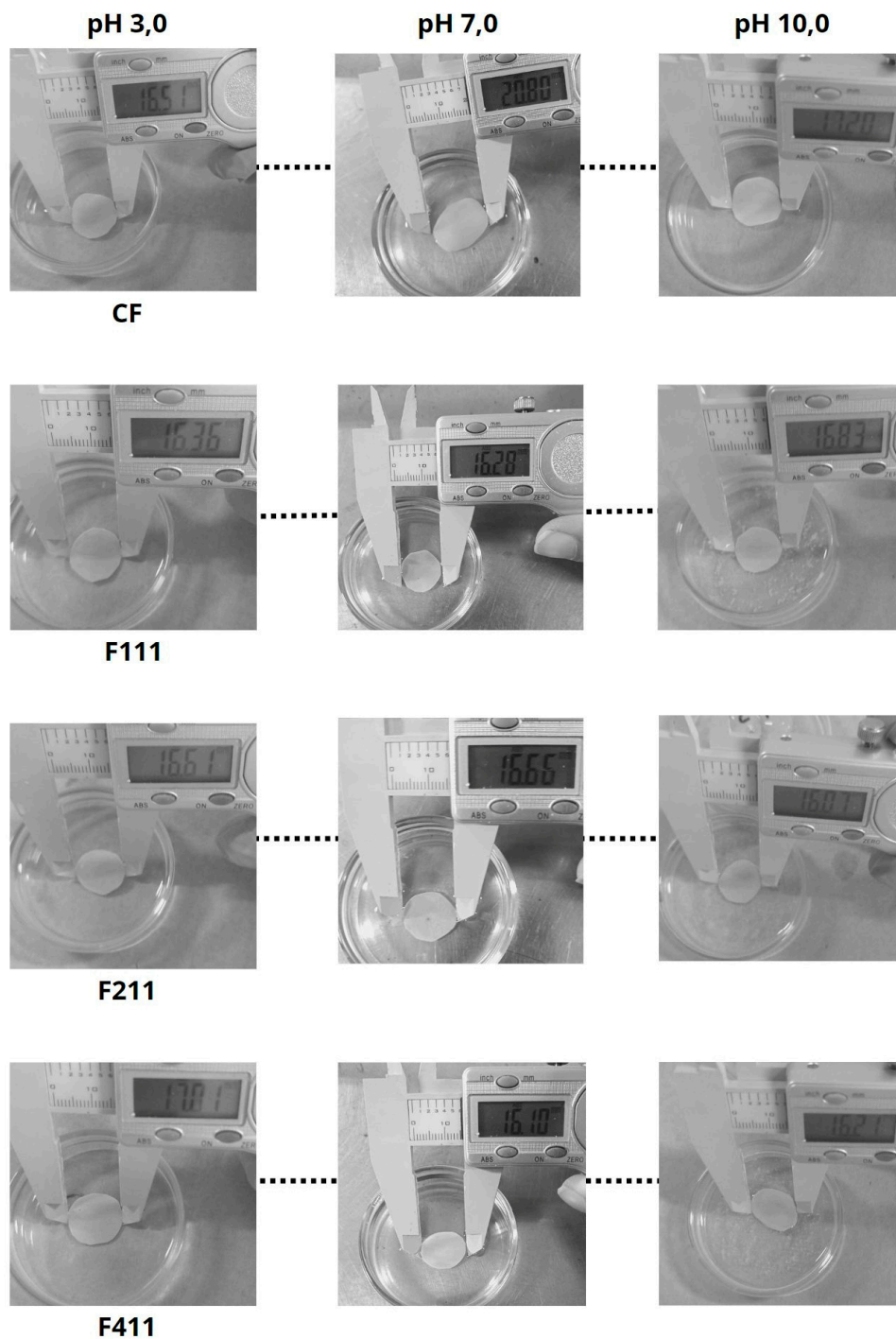


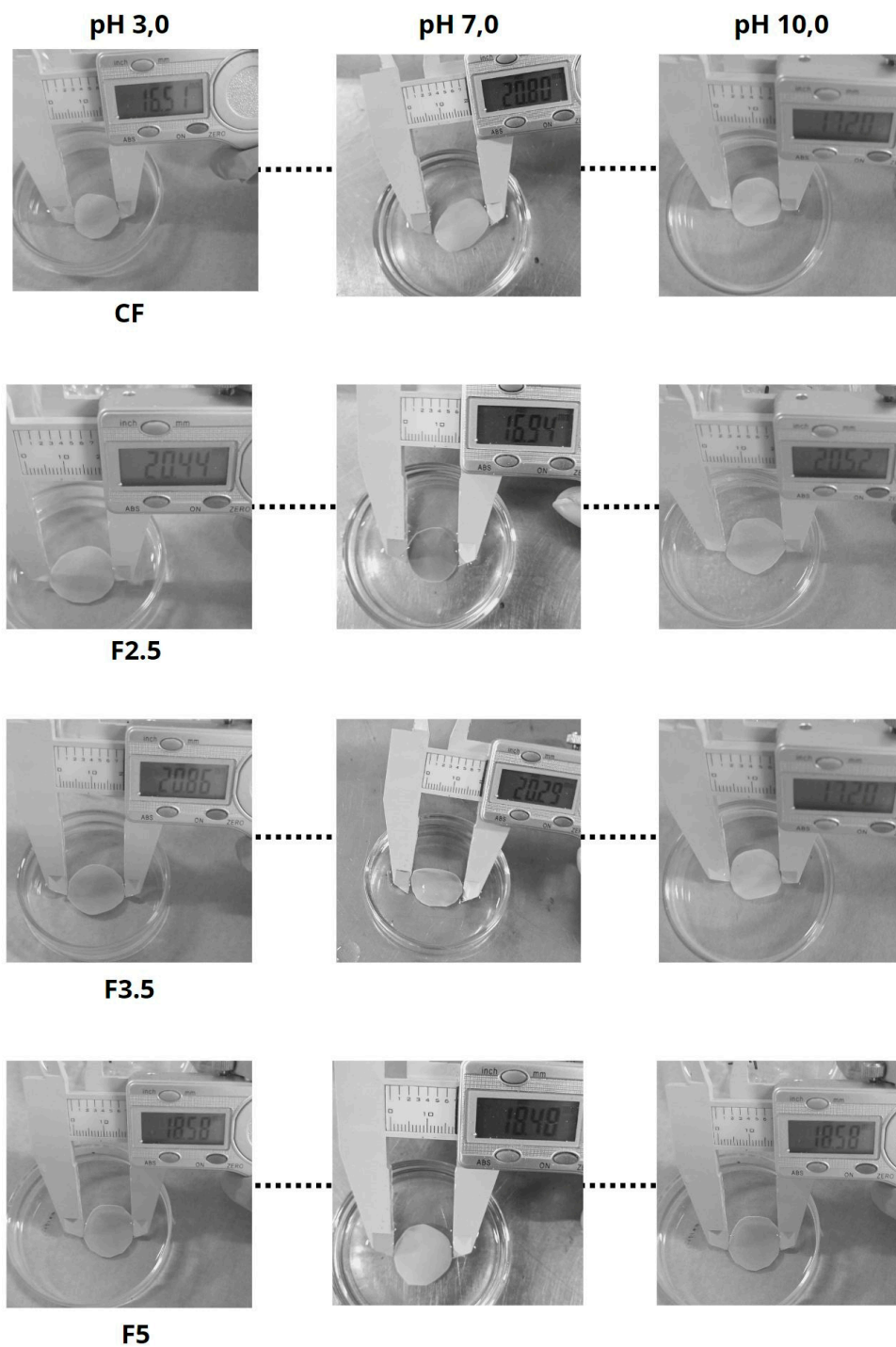
## Supplementary Data



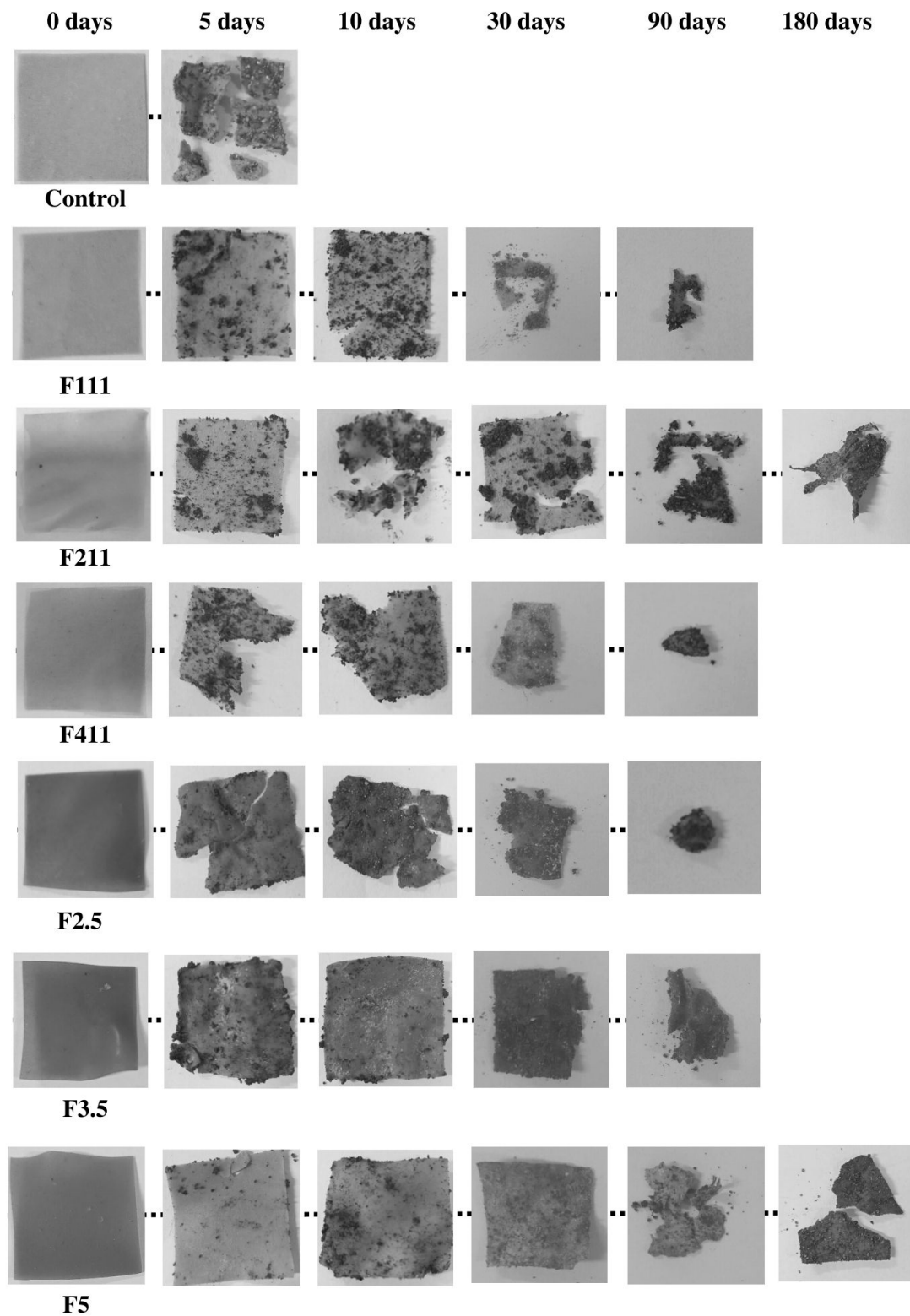
**Figure S1.** Pictures of samples (a) F311 – after immersion in 2 %  $\text{CaCl}_2$  solution for 30 min, and (b) F511- after immersion in 2 %  $\text{CaCl}_2$  solution for 5 min.



**Figure S2.** Pictures of the control film (CF) and  $\text{CaCl}_2$ -crosslinked samples (F111 – 6%, 17.5 min; F211 – 10%, 5 min; F311 – 2%, 30 min; F411 – 10%, 30 min; F511- 2% 5 min) immersed in alkaline, neutral and acid medium after 10 days.



**Figure S3.** Pictures of the control film (CF) and the samples crosslinked by 1,4-phenylenediboronic acid (PBDA) (F2.5 – 2.5% PBDA; F3.5 – 3.5% PBDA; F5 – 5.0% PBDA) immersed in alkaline, neutral and acid medium after 10 days.



**Figure S4:** Biodegradability test of the control film, samples immersed in a chloride calcium solution (F111 – 6%, 17.5 min; F211 – 10%, 5 min; F311 – 2%, 30 min; F411 – 10%, 30 min; F511 – 2% 5 min), and samples with 1,4-phenylenediboronic acid (PDBA) (F2.5 – 2.5% PDBA; F3.5 – 3.5% PDBA; F5 – 5.0% PDBA) as a function of the buried time.