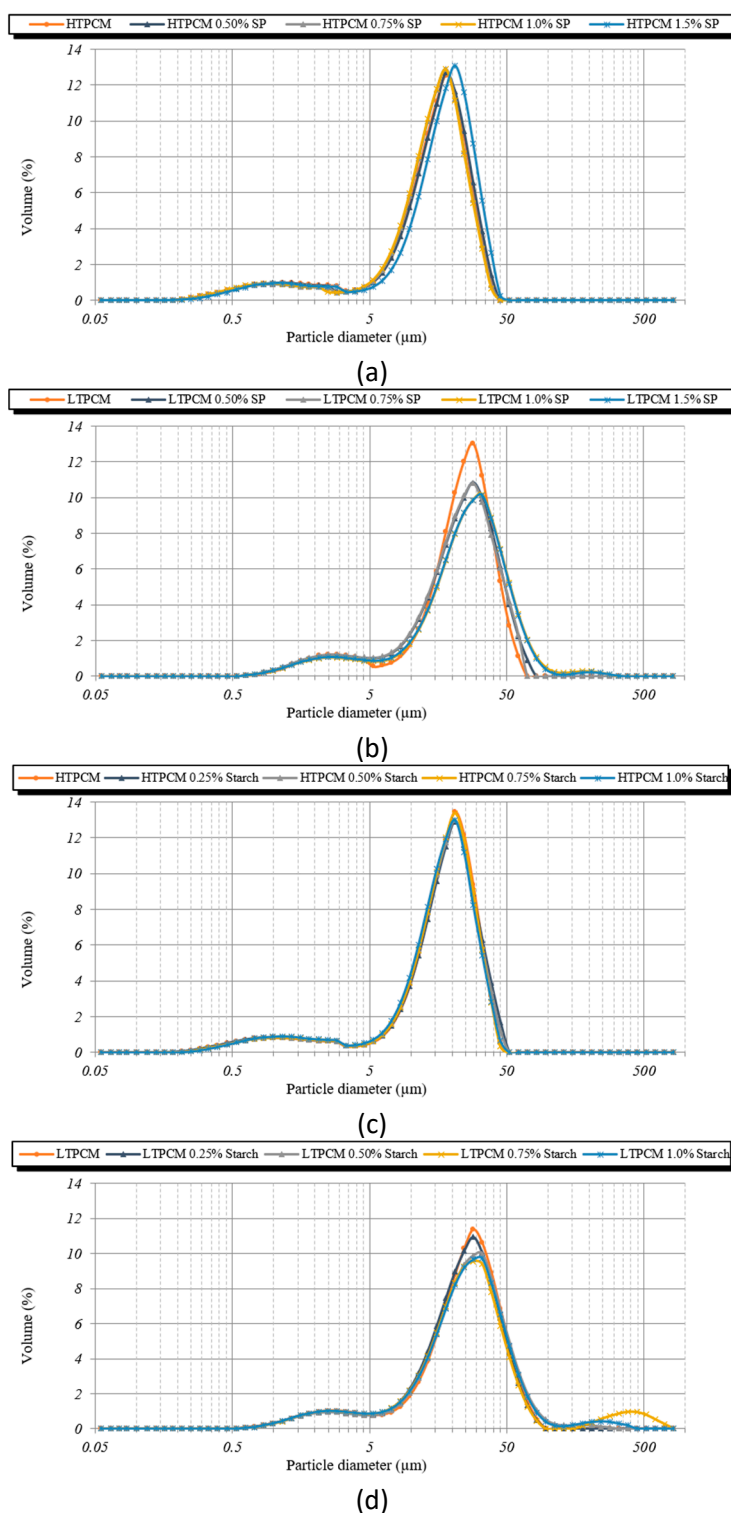


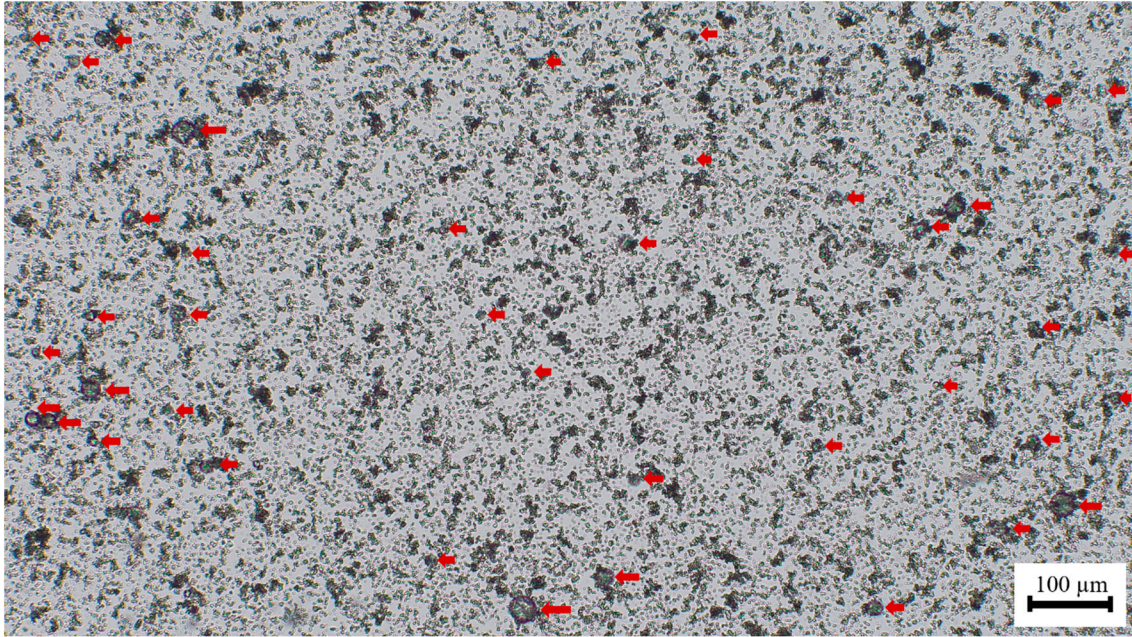
# SUPPLEMENTARY MATERIAL

Study on the interaction of polymeric chemical additives with phase change materials in air lime renders

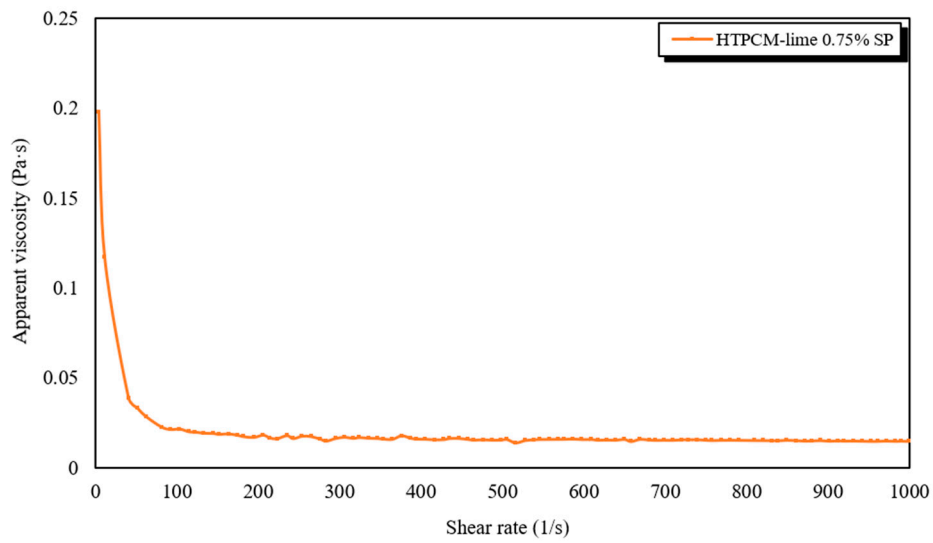
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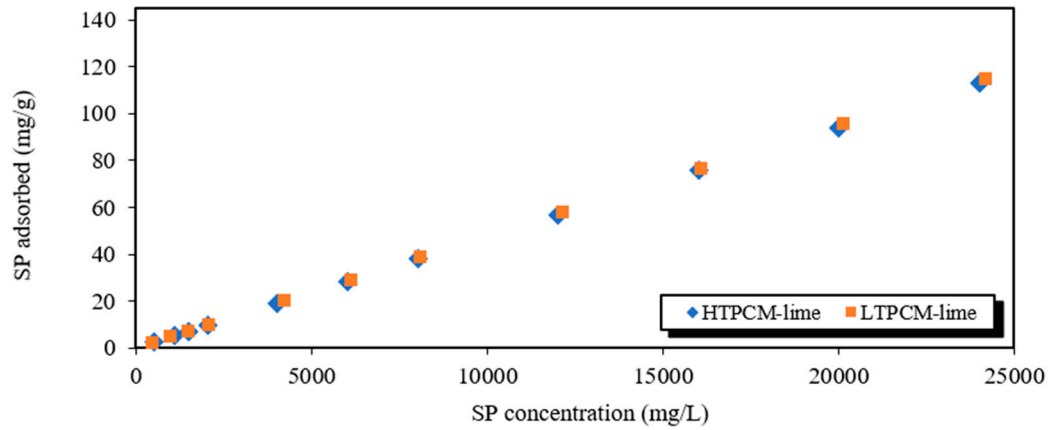
**Figure S1:** Particle size distribution of 5% wt/wt PCM with either increasing superplasticizer dosages in: (a) 5% wt/wt HTPCM, (b) 5% wt/wt LTPCM; or increasing starch dosages in (c) 5% wt/wt HTPCM and (d) 5% wt/wt LTPCM suspensions.



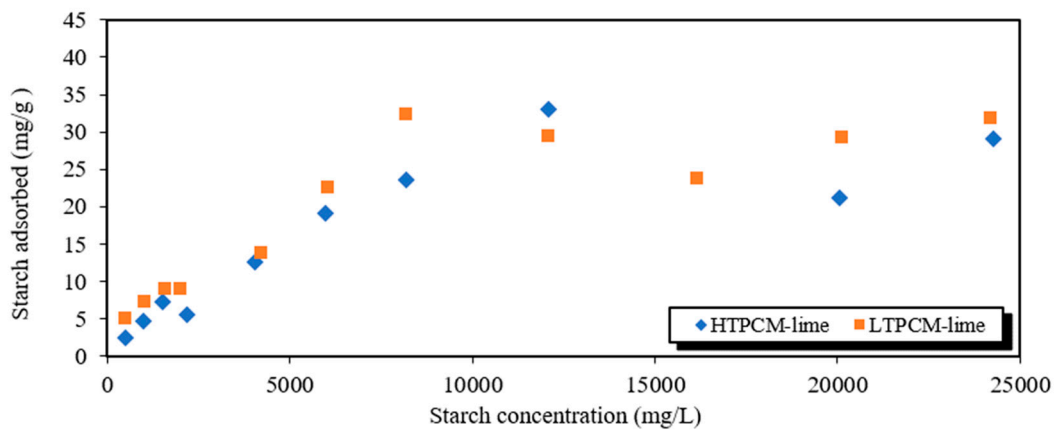
**Figure S2:** Optical micrograph of HTPCM-lime suspension with 1% bwol of superplasticizer. Most of the microcapsules of PCMs are denoted with red arrows to identify their dispersion. Image captured at 10x.



**Figure S3:** Viscosity measurements of 50% wt/wt lime, 5% bwol of HTPCM and 0.75% bwol of SP.



(a)



(b)

**Figure S4:** Adsorption isotherm curves onto PCM-lime of: (a) superplasticizer and (b) starch.

**Table S1:** Results of adsorption isotherms onto PCM-lime suspensions of superplasticizer: Langmuir and Freundlich adsorption parameters.

	Superplasticizer					
	Langmuir			Freundlich		
	qm (mg/g)	b (L/mg)	R <sup>2</sup>	K	1/n	R <sup>2</sup>
HTPCM	10762.5	$4.41 \cdot 10^{-7}$	0.7024	0.00485	0.9970	0.9999
LTPCM	-	-	-	0.00464	1.0021	0.9999

Notes: qm: maximum sorption capacity. b: the Langmuir constant. K, 1/n: the Freundlich constants. R<sup>2</sup>: correlation coefficient of the linear regression.

**Table S2:** Results of adsorption isotherms onto PCM-lime suspensions of adhesion booster: Langmuir and Freundlich adsorption parameters.

	Adhesion booster					
	Langmuir			Freundlich		
	qm (mg/g)	b (L/mg)	R <sup>2</sup>	K	1/n	R <sup>2</sup>
HTPCM	40.2	$1.33 \cdot 10^{-4}$	0.6727	0.03598	0.7003	0.8811
LTPCM	36.1	$2.27 \cdot 10^{-4}$	0.8734	0.22099	0.5058	0.9213

Notes: qm: maximum sorption capacity. b: the Langmuir constant. K, 1/n: the Freundlich constants. R<sup>2</sup>: correlation coefficient of the linear regression.