

Supplementary figures



Figure S1 (to be deposited as supplementary material). On the left, a pile of post-earthquake rubble at the COSMARI public plant (Tolentino, Marche, Italy) after first processing by hand picking removal of metals, woods, plastic, etc. On the right, the CDW after crushing and size-sorting showing the extreme heterogeneity of type-unsorted ceramic-like material.

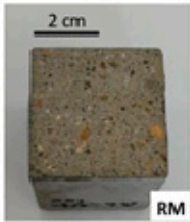










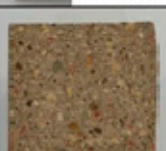

RM reference mortar <i>VA: virgin aggregate</i>	RVAM recycled virgin aggregate mortar <i>VA + RA</i>	RAM recycled aggregate mortars <i>RA: recycled aggregates</i>	
 RM	 RVAM-NS-50	 RAM-NS-100	NS: natural stone
	 RVAM-CO-50	 RAM-CO-100	CO: concrete
	 RVAM-TI-50	 RAM-TI-100	TI: tile
	 RVAM-BR-50	 RAM-BR-100	BR: brick
	 RVAM-PF-50	 RAM-PF-100	PF: perforated brick
	 RVAM-RT-50	 RAM-RT-100	RT: roof tile

Figure S2 (to be deposited as supplementary material). Scheme of the 13 different types of mortars prepared with VA and the six RA.

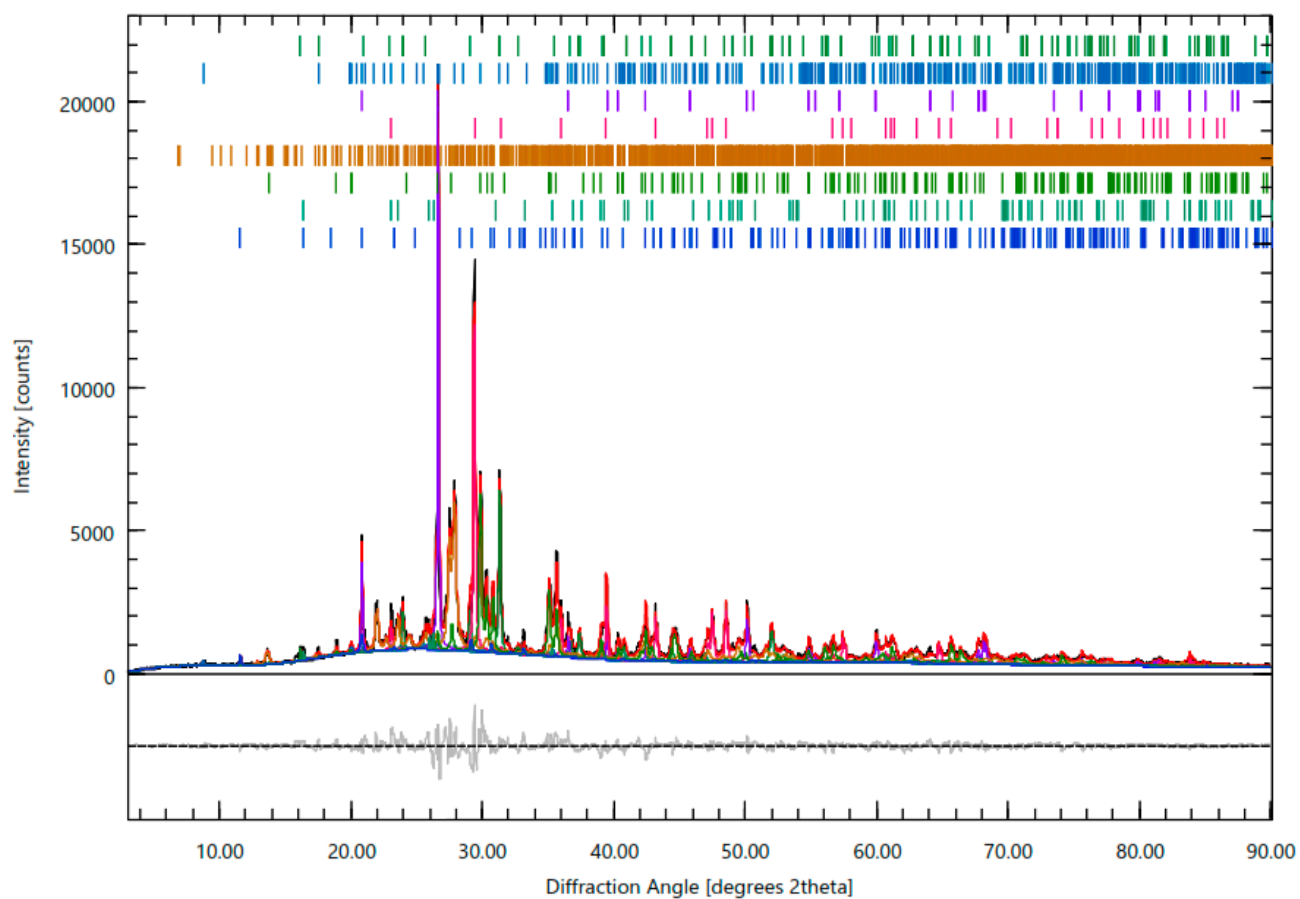
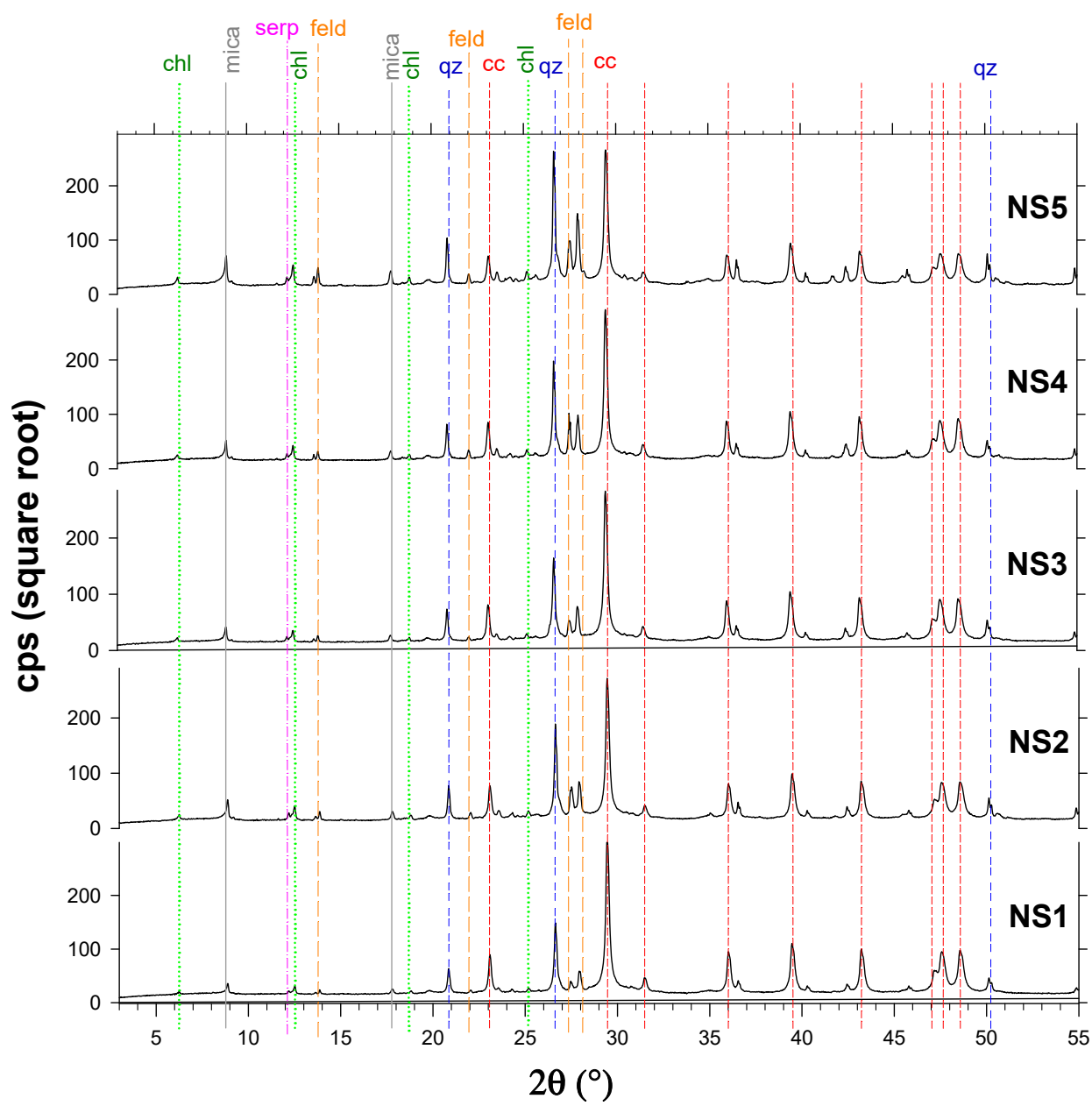
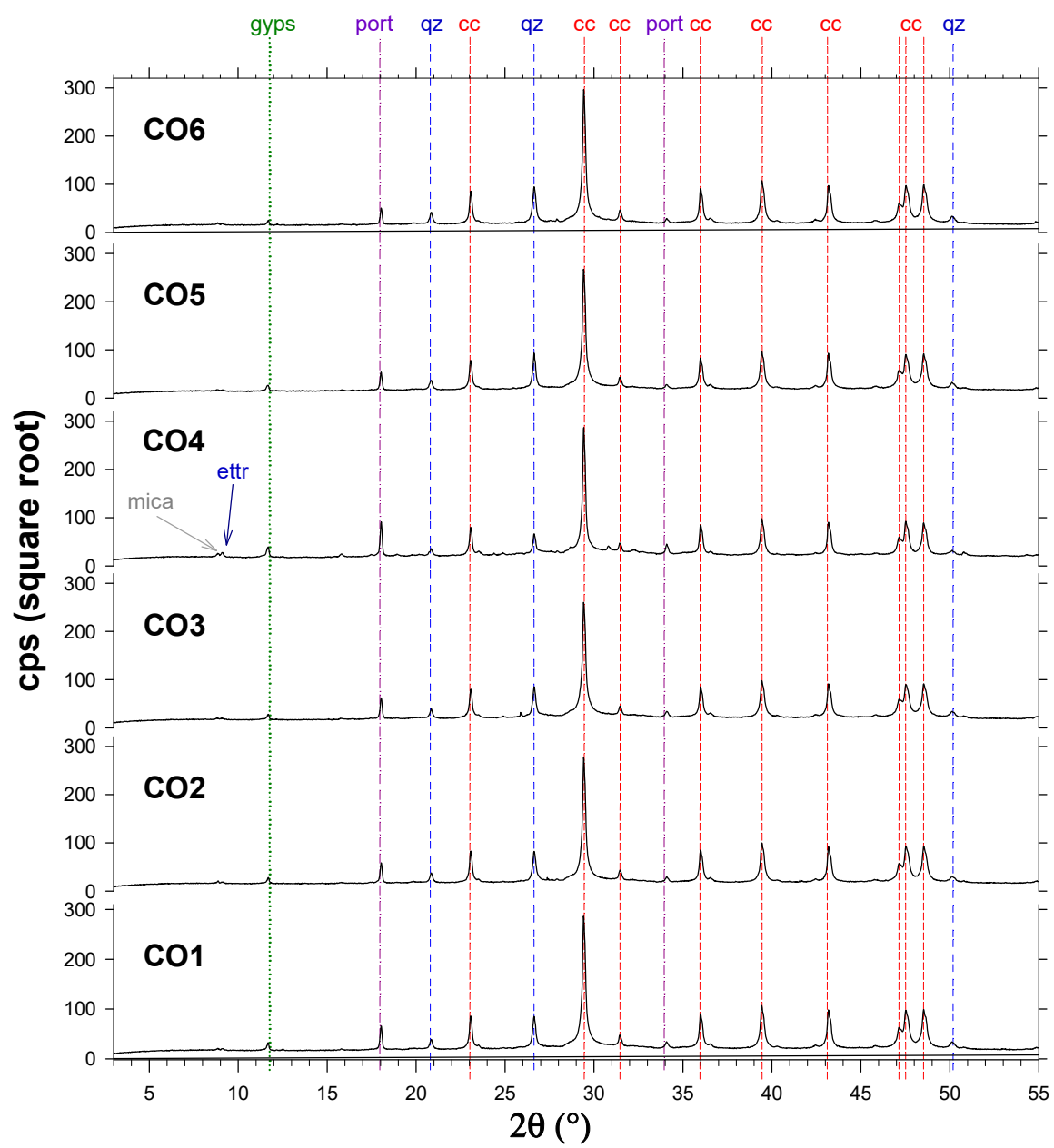


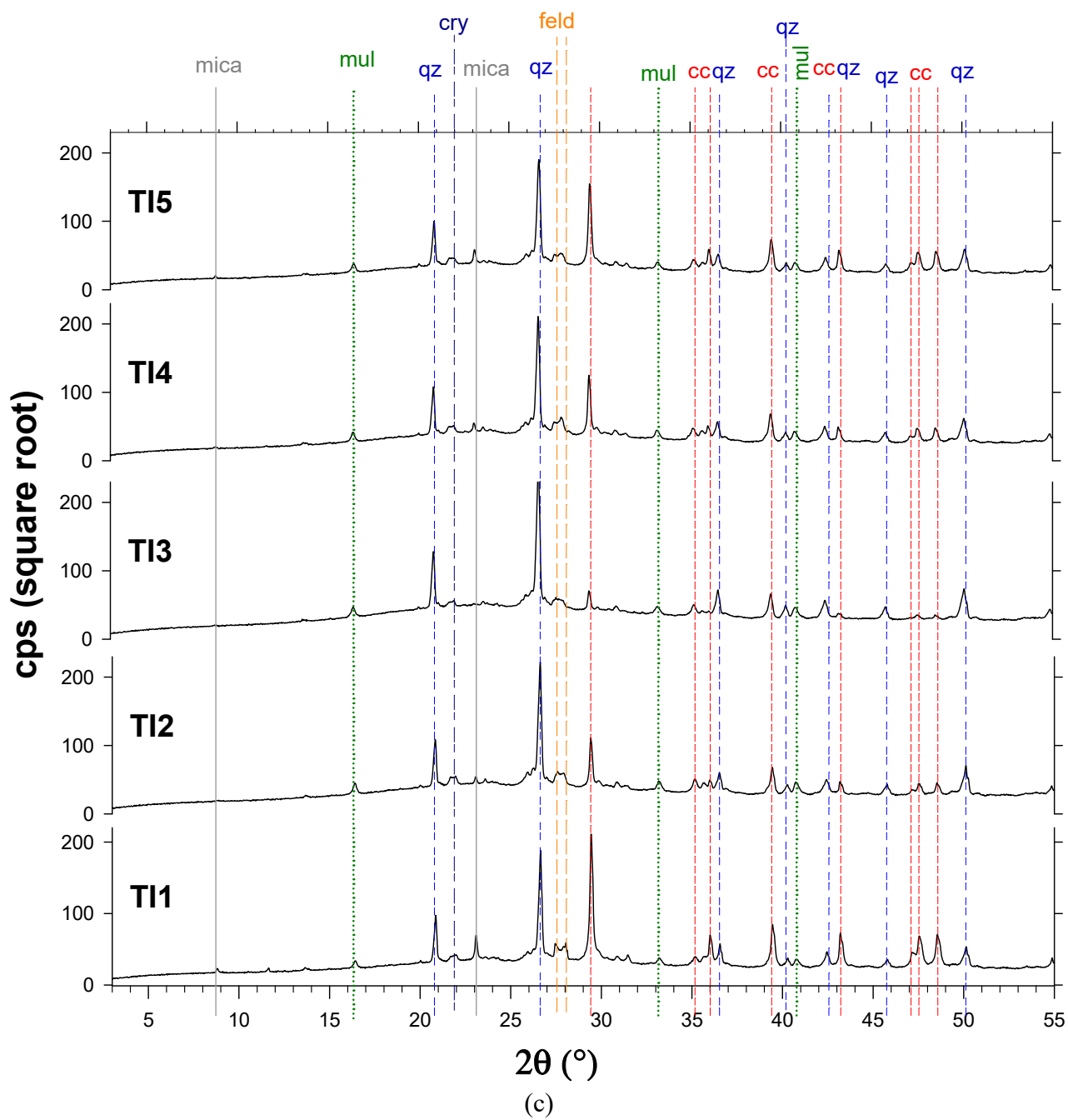
Figure S3. (to be deposited as supplementary material). Example of Rietveld fit for sample RT2 (upper ticks mark the reflection lines of the quantified crystalline phases from top to bottom: gehlenite, muscovite, quartz, calcite, plagioclase, augite, mullite, gypsum)

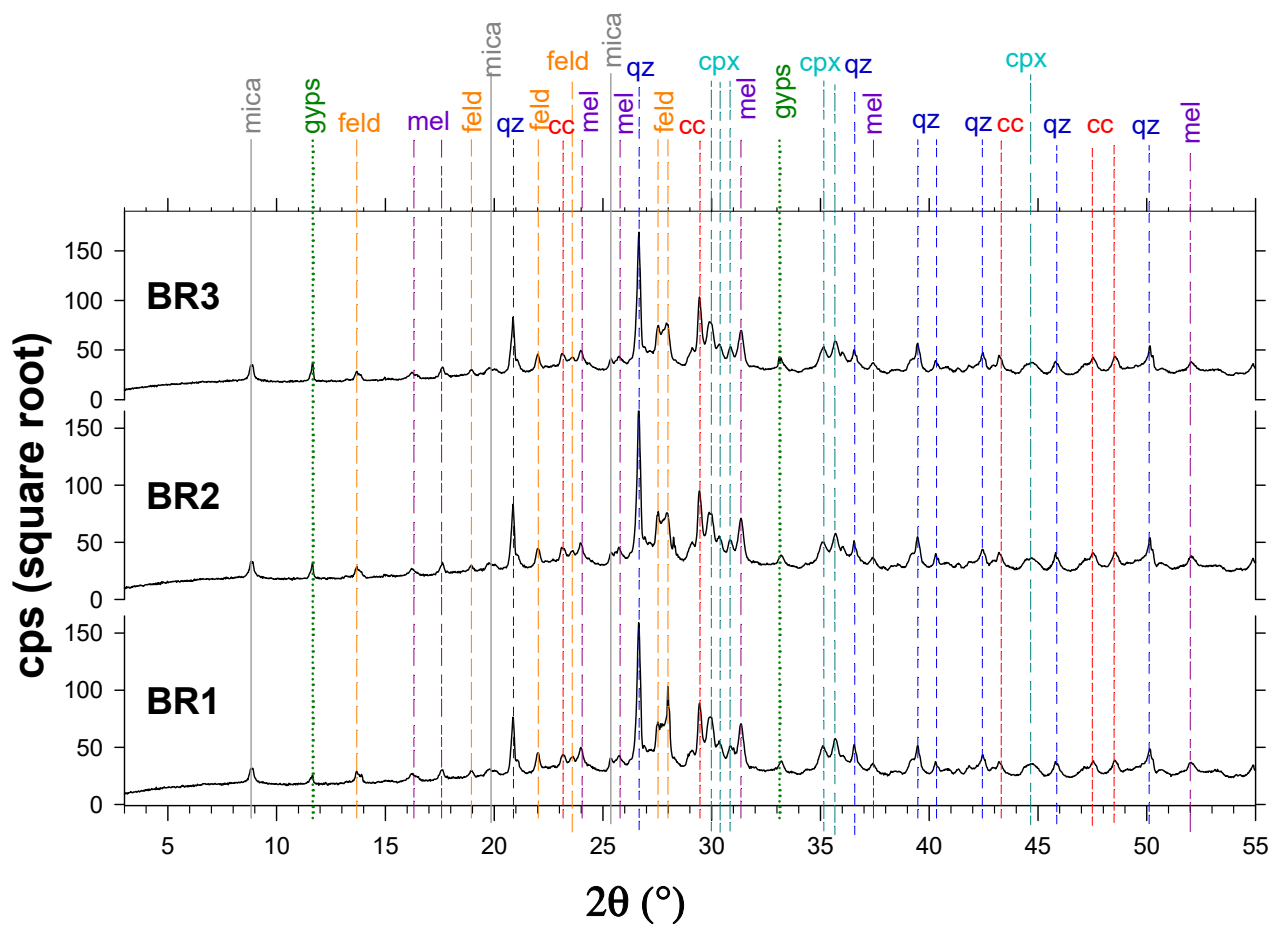


(a)

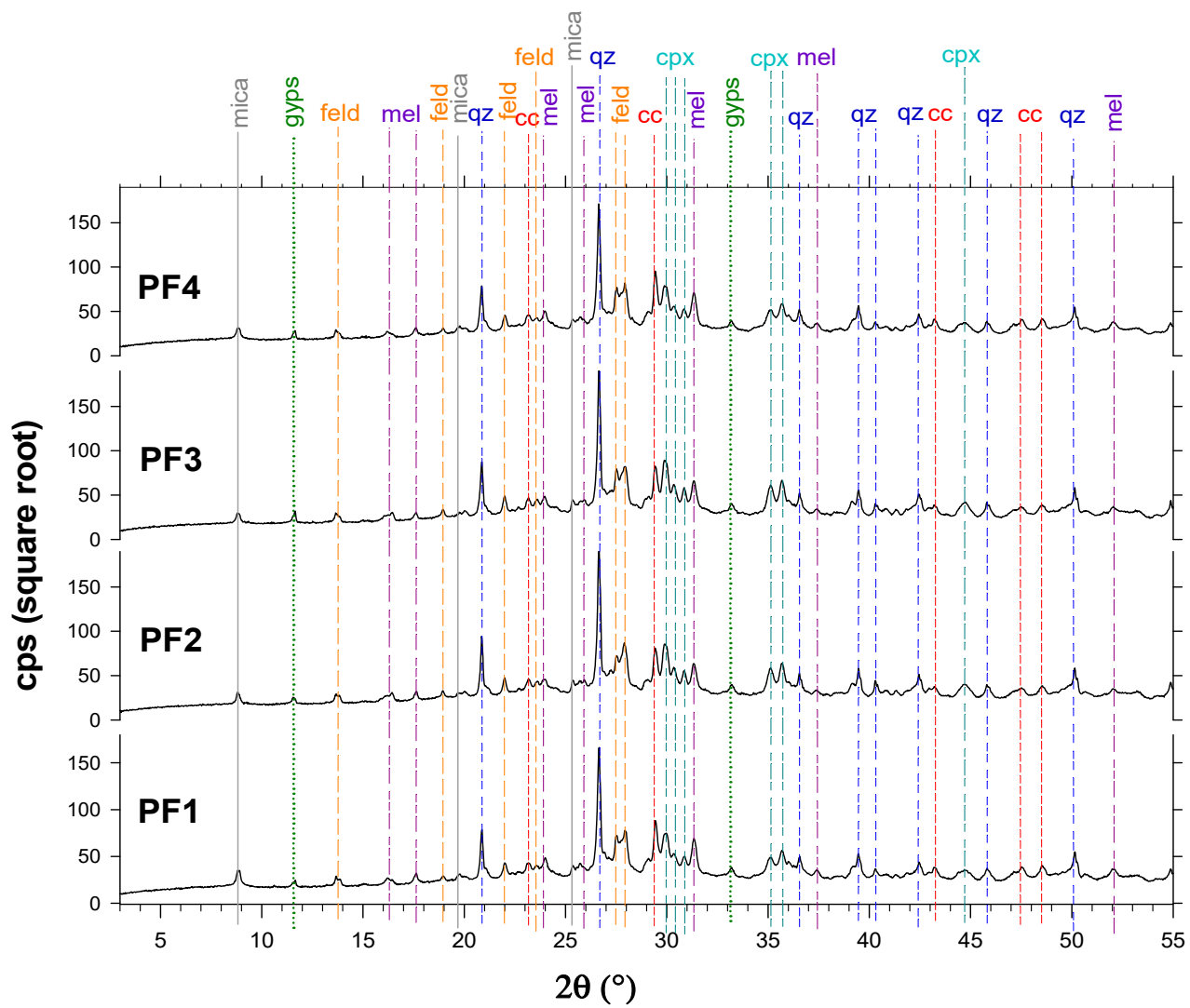


(b)





(d)



(e)

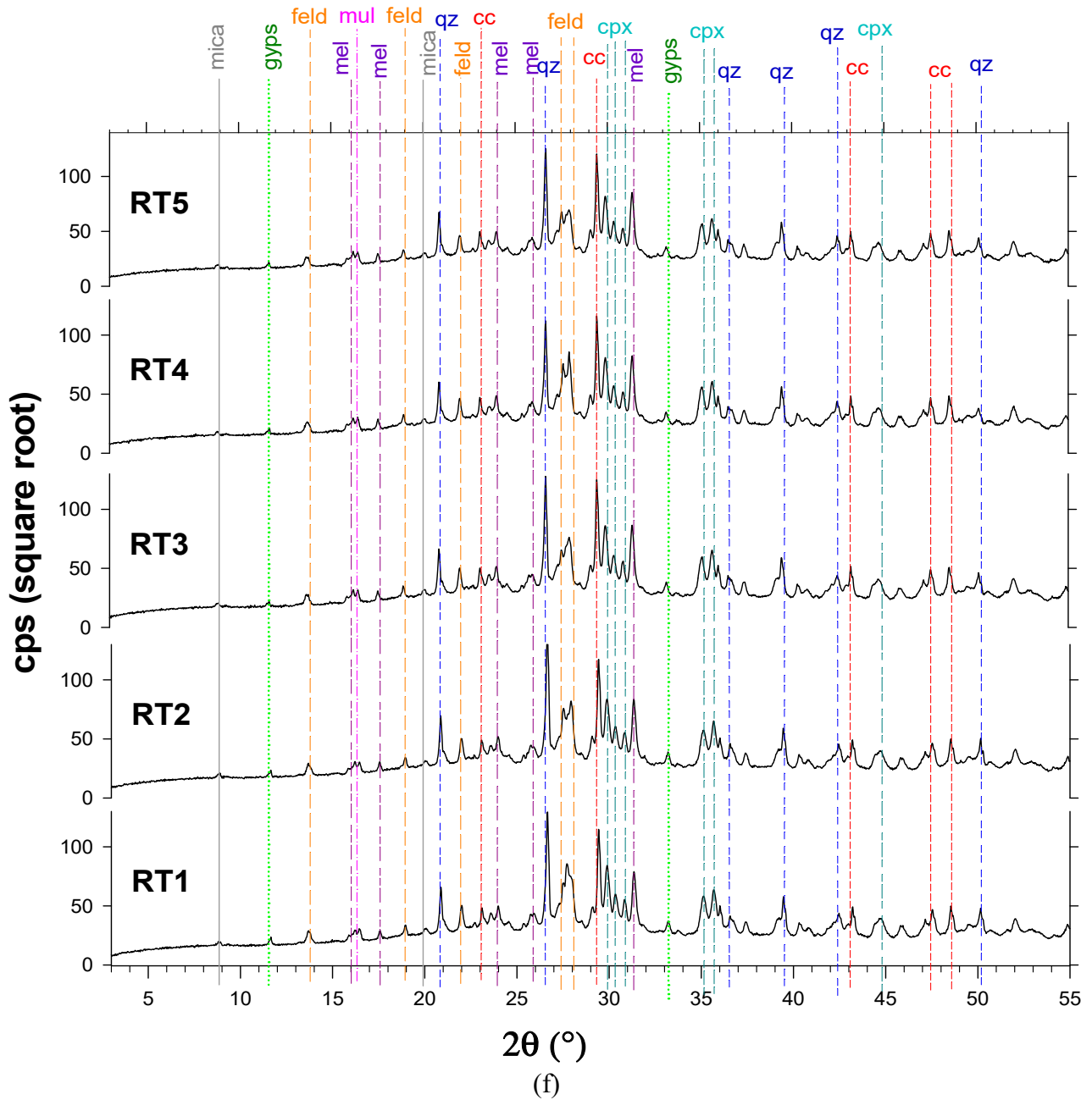


Figure S4. (a) (to be deposited as supplementary material). Stacked XRPD patterns from 3 to 55 of $2\theta^\circ$ (the actual scans are from 2 to 90 of $2\theta^\circ$) for the five RA-NS-100 samples corresponding to CDW RA sorted as natural stones (Tables 2 and 3). The vertical lines correspond to the most intense Bragg reflections of crystalline standards, cps indicates counts per second and acronyms of crystalline phases as reported in Table 3, except feld (feldspars) that indicates either anorthite, albite and/or orthoclase. (coloured);

(b) (to be deposited as supplementary material). Stacked XRPD patterns from 3 to 55 of $2\theta^\circ$ (the ac-

tual scans are from 2 to 90 of $2\theta^\circ$) for the six RA-CO-100 samples corresponding to CDW RA sorted as concrete and mortars (Tables 2 and 3). The vertical lines correspond to the most intense Bragg reflections of crystalline standards, cps indicates counts per second and acronyms of crystalline phases as reported in Table 3.

(c) (to be deposited as supplementary material). Stacked XRPD patterns from 3 to 55 of $2\theta^\circ$ (the actual scans are from 2 to 90 of $2\theta^\circ$) for the five RA-TI-100 samples corresponding to CDW RA sorted as tiles (Tables 2 and 3). The vertical lines correspond to the most intense Bragg reflections of crystalline standards, cps indicates counts per second and acronyms of crystalline phases as reported in Table 3, except feld (feldspars) that indicates either anort, alb and/or orth.

(d) (to be deposited as supplementary material). Stacked XRPD patterns from 3 to 55 of $2\theta^\circ$ (the actual scans are from 2 to 90 of $2\theta^\circ$) for the three RA-BR-100 samples corresponding to CDW RA sorted as bricks (Tables 2 and 3). The vertical lines correspond to the most intense Bragg reflections of crystalline standards, cps indicates counts per second and acronyms of crystalline phases as reported in Table 3, except feld (feldspars) that indicates either anort, alb and/or orth.

(e) (to be deposited as supplementary material). Stacked XRPD patterns from 3 to 55 of $2\theta^\circ$ (the actual scans are from 2 to 90 of $2\theta^\circ$) for the three RA-PF-100 samples corresponding to CDW RA sorted as perforated bricks (Tables 2 and 3). The vertical lines correspond to the most intense Bragg reflections of crystalline standards, cps indicates counts per second and acronyms of crystalline phases as reported in Table 3, except feld (feldspars) that indicates either anort, alb and/or orth.

(f) (to be deposited as supplementary material). Stacked XRPD patterns from 3 to 55 of $2\theta^\circ$ (the actual scans are from 2 to 90 of $2\theta^\circ$) for the three RA-RT-100 samples corresponding to CDW RA sorted as roof tiles (Tables 2 and 3). The vertical lines correspond to the most intense Bragg reflections of crystalline standards, cps indicates counts per second and acronyms of crystalline phases as reported in Table 3, except feld (feldspars) that indicates either anort, alb and/or orth.