

Journal Quality Report on "Construction and Building Materials"

Recently, the 5GH Team analyzed the all 56 articles published on Volume 469 of the journal "Construction and Building Materials", an Elsevier title, and found 12 of them (about 21.4%) have major issues, including reused spectra/images, problematic authorship, abnormal data patterns, as well as abnormal noise patterns of the published spectra. The high percentage of the problematic articles suggests that this journal does not maintain high quality editorial and peer review process. Based on these results, the 5GH Team assigns the Journal Quality Index [1] for "Construction and Building Materials" to be **E**.

10.1016/j.conbuildmat.2025.140414

10.1016/j.conbuildmat.2025.140414,
identical noise patterns

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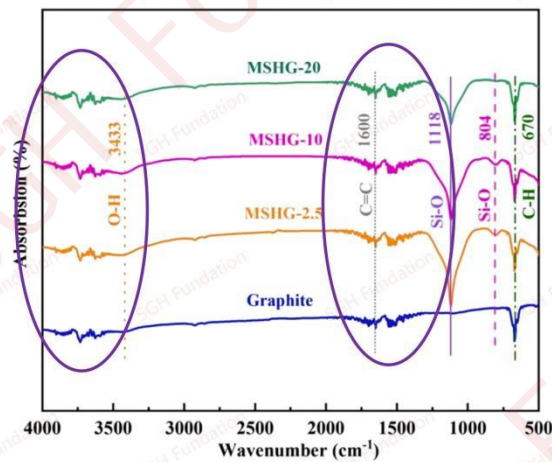


Fig. 4. FT-IR date of samples with different graphite content.

Identical noise patterns are observed from the lines on Figure 4 of this article, which is likely resulted from improper experimental setups.

10.1016/j.conbuildmat.2025.140484

10.1016/j.conbuildmat.2025.140484,
Asymmetrical error bars

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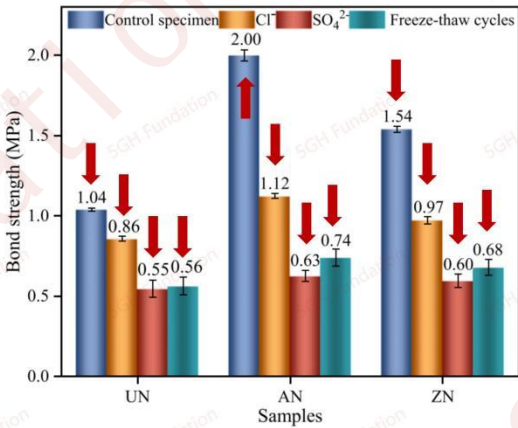


Fig. 4. Bond strength of the SAC-NAACs under various conditions.

Unreasonable asymmetrical error bars are observed on Figure 4 of this article. The data shows no order-of-magnitude changes, and their measurements are not log-scaled, therefore, the asymmetrical error bars are very confusing.

10.1016/j.conbuildmat.2025.140487

10.1016/j.conbuildmat.2025.140487,
reused spectra?

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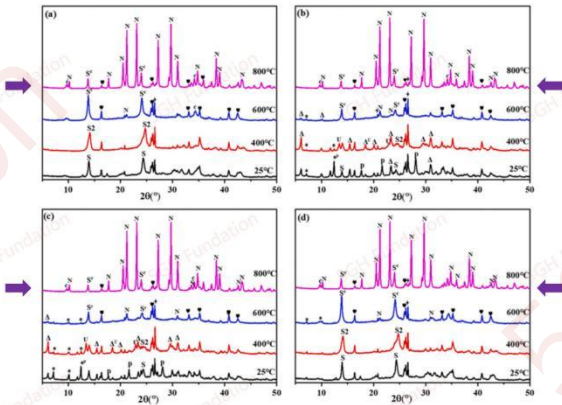


Fig. 15. XRD pattern of samples after room temperature and high temperature resistance tests. (●) Mullite; (◆) SiO₂; (Δ) Faujasite; (*): A zeolite; (p) Chabasite; (N) Nepheline; (C) Albite; (S) Sodalite; (S2) Dehydrated sodalite).

3.7. Phase change of the samples after high-temperature

To investigate the enhancement mechanism of zeolite seed on the high-temperature resistance of geopolymers, the physical phase analysis of the samples after the action of different temperatures was carried out. Fig. 15 is the XRD image of the samples after room temperature and high-temperature resistance tests. After exposure at 400 °C for 1 h, the induced zeolite phase still exists, the diffraction peak intensity of FAU was further enhanced, the diffraction peak intensity of A zeolite was reduced, and sodalite was dehydrated to form anhydrous sodalite [73]. At 600 °C, nepheline and albite begin to be generated, and the gel phase begins to decompose. Theoretically, the strength should show a downward trend, but the results of the strength test showed an upward trend in the strength of samples containing seed. As shown in Fig. 15, FAU, A zeolite and sodalite still exist at 600 °C. These zeolite crystals act as pore fillers and assist in maintaining the dimensional stability and strength characteristics of the material at high temperatures [74]. At 800 °C, the gel phase was further destroyed, which further deteriorated the structure of the sample and ultimately caused a significant reduction of the macroscopic strength. Combined with the strength test results, it is evident that the strength of the samples in group (c) decreases significantly after calcination at 800 °C, and the strength was almost zero, while the samples containing zeolite seed still maintain high strength. According to the results of phase composition analysis, the gel phase content of the samples added with zeolite seed was relatively low due to the regulation effect of seed, so the structural damage caused by dehydroxylation of the hydration products of the gel phase has less influence on its structure. Secondly, there are more zeolite phases (sodalite, class A zeolite, etc.) in the pores of the samples containing zeolite seed. At this temperature, these zeolites still act as aggregates to fill the geopolymer pores after the crystalline transformation to nepheline, albite or other stable anhydrous aluminosilicates. Finally, the geopolymer will melt under certain high temperature, which will increase the strength of the sample. The analysis shows that the combined action of the above three factors makes the strength of the samples containing zeolite seed slightly enhanced after calcination at 600 °C and 800 °C [75].

4. Conclusion

A XRD pattern is reused on Figure 15 (a), (b), (c), and (d). Neither the figure caption or the main text of the article addresses the differences between Figure 15 (a), (b), (c), and (d). The main text stated that "combined with the strength test results, it is evident that the strength of the samples in group (e) decreases significantly after calcination at 800 °C, and the strength was almost zero, while the samples containing zeolite seed still maintain high strength", however, no "(e)" is shown on the Figure 15. Therefore, the spectra shown on Figure 15 are confusing.

10.1016/j.conbuildmat.2025.140491

10.1016/j.conbuildmat.2025.140491,
reused images

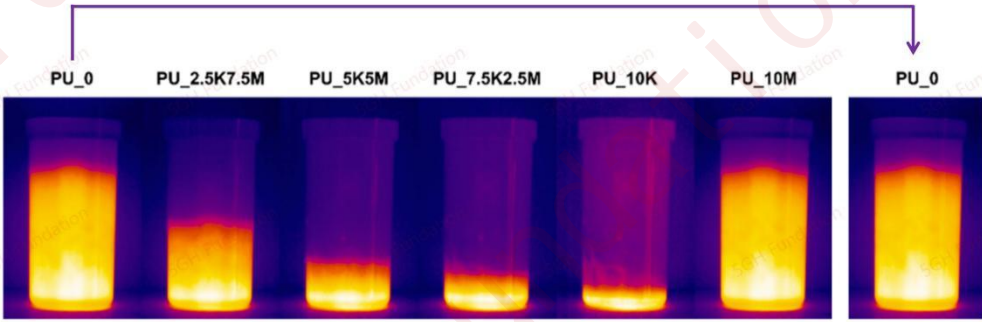


Fig. 4. Infrared images of the growth of polyurethane foam with cork and microspheres at 140 s.

Fig. 4. I

Reused images are observed on PU_0 panel and PU_10M panel of Figure 4.

10.1016/j.conbuildmat.2025.140496

10.1016/j.conbuildmat.2025.140496,
reused spectra

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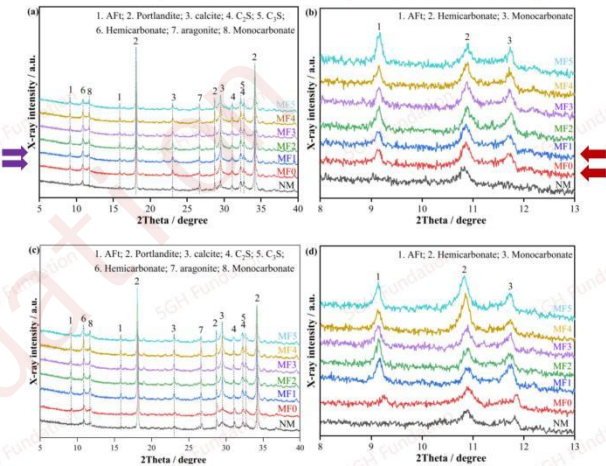


Fig. 5. XRD patterns of pastes: (a) 3 days samples by low-resolution scanning mode; (b) 3 days samples by high-resolution scanning mode; (c) 28 days samples by low-resolution scanning mode; (d) 28 days samples by high-resolution scanning mode.

Two pairs of reused XRD patterns are observed on the Figure 5 (a) and (b) of this article: (1) MF0 line and MF1 line on Figure 5 (a), and (2) MF0 line and MF1 line on Figure 5 (b).

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abnormal data patterns

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Table 4
Particle size distribution and specific surface area of synthetic HM-LCC with different MLs.

Group NO.	Particle size (μm)			Specific surface area (m^2/g)
	D ₁₀	D ₅₀	D ₉₀	
M0	2.55	19.70	79.20	1.04
M1	2.44	19.00	71.60	1.03
M2	3.32	26.40	98.60	0.88
M3	2.49	15.30	57.20	2.89
M4	2.40	14.40	57.50	2.83

Abnormal patterns of the data on Table 4 are observed on this article. Data on column D50 and D90 have same last digit number of 0, while the data on column D10 do not exhibit this pattern.

10.1016/j.conbuildmat.2025.140507

10.1016/j.conbuildmat.2025.140507,
abnormal data patterns

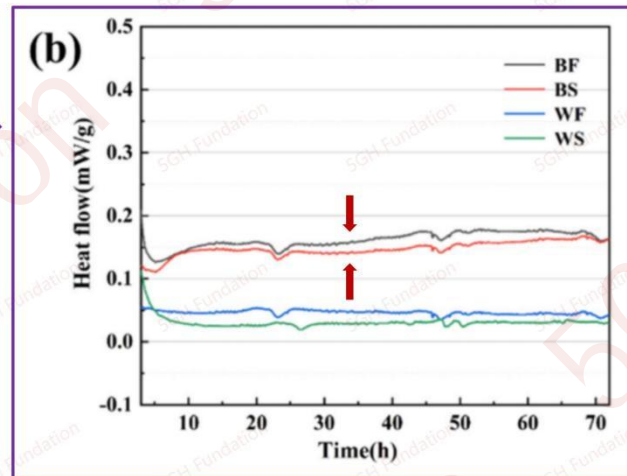
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Table 5
Mixed proportions for concrete series SR.

Samples	SCM (kg/ m ³)	Aggregate (kg/m ³)			Sand ratio (%)	Water binder ratio (%)	Water reducer (%)
		IOTs	MS	WR			
SR-1	490	403.1	134.4	1196.1	0.31	0.36	0.5
SR-2		442.1	147.4	1144.1	0.34		
SR-3		481.1	160.4	1092.1	0.37		
SR-4		520.1	173.4	1040.1	0.40		
SR-5		559.1	186.4	988.1	0.43		

Abnormal data patterns are observed on Table 5 of this article. The data on IOTs, MS, and WR columns has same last digit numbers of 1, 4, and 1, respectively, which is unusual in real measurements.

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Compound	Half-life (min)
F-Ref	~10
25-CSH	~20
SHUCE	~60
SHUCE	~130
SHUCE	~360
SHUCE	~520

Sample	Thermal conductivity (W/(m K))
FC-Ref	~0.19
FC2%CSH	~0.17
FC2%CSH/PCE	~0.16
FC4%CSH/PCE	~0.15

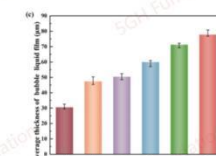
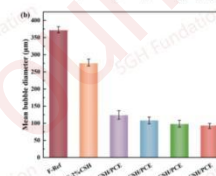
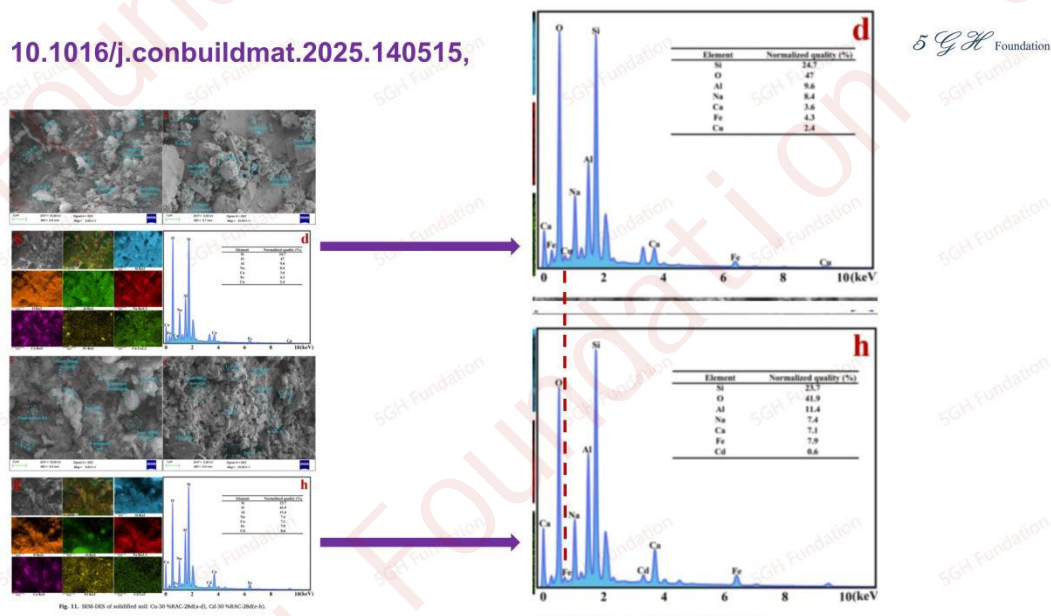


Fig. 9. Time evolution of (a) optical micrographs, (b) mean bubble size, and (c) average thickness of the bubble liquid film of foams with different types and concentrations of nanoparticles.

Unreasonable asymmetrical error bars are observed on multiple figures, including Figure 8, 9, 10, 11, 13, 15, 16, and others, of this article. The data shows no order-of-magnitude changes, and their measurements are not log-scaled, therefore, the asymmetrical error bars are very confusing.

10.1016/j.conbuildmat.2025.140515

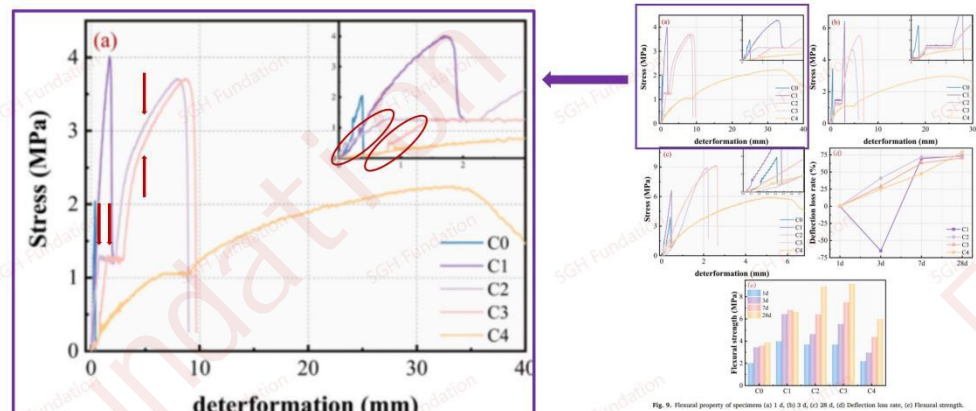


Some peaks on Figure 11 (d) and (h) of this article were inconsistently assigned. For example, the peak around 0.9 keV on Figure 11 (d) was assigned to Cu, while the peak around same position on figure 11 (h) was assigned to Fe. These inconsistent assignment raises concerns about these EDX spectra on this article.

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10.1016/j.conbuildmat.2025.140524,
identical noise patterns (red arrows and cycles)

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Identical noise patterns are observed from the light purple line and the pink line on the Figure 9 (a) of this article, which is likely resulted from improper experimental setups.

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Viscoelasticity stage evolution characteristics and multiphase microstructure of aged crumb rubber-modified asphalt

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CRediT authorship contribution statement

RuiPu Chen: Writing – original draft. Long Chen: Supervision. Hongzhou Zhu: Supervision. Peng Hu: Supervision. Li Ou: Supervision.

➤ Chongqing Open University is an institution for online continuing education, instead of a research university, or a teaching and research university. It is hardly to believe that Ou L from Chongqing Open University supervised the study.

➤ This article has ZERO self-citation, Chen L (陈龙) published a few articles previously, but we find no further publication record for other authors.

➤ This article is likely a part of an authorship-for-sale case

The authorship of this article is concerning. (1) Chongqing Open University is an institution for online continuing education, instead of a research university, or a teaching and research university. It is hardly to believe that Ou L from Chongqing Open University supervised the study. (2) This article has ZERO self-citation. Although Chen L (陈龙) published a few articles previously, but the 5GH Team find no further publication record for other authors. These two reasons suggest that the authorship of Ou L is questionable.

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