Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.
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Supporting Information

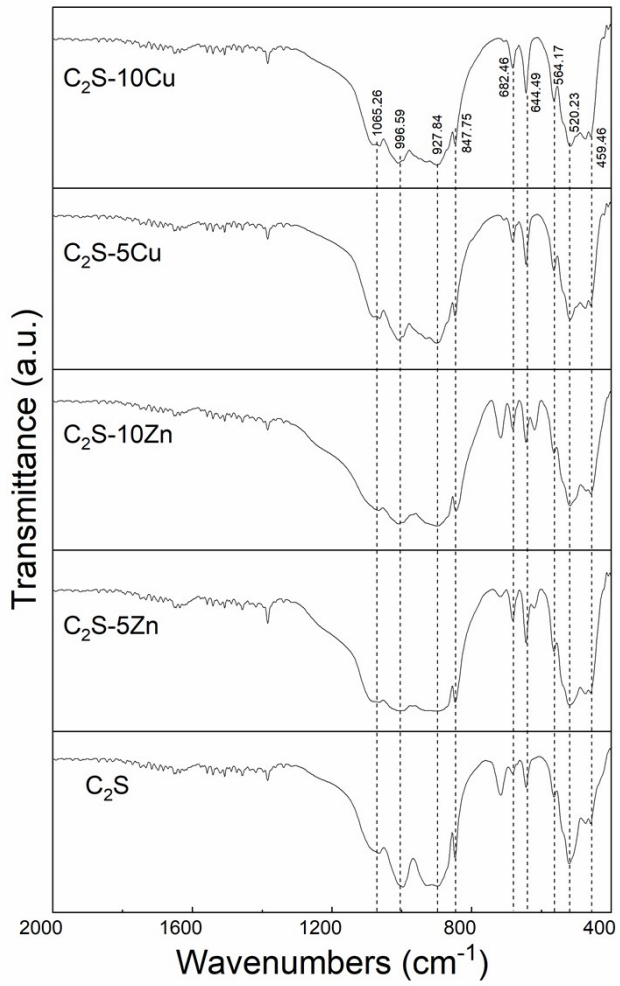

Figure S1. FTIR of the C_2S powders without and with Zn or Cu doping. The absorption peaks around 996.59 cm^{-1}, 927.84 cm^{-1}, 847.75 cm^{-1}, and 520.23 cm^{-1} are characteristic of the asymmetric stretch, symmetric stretch, and bendingmodes of vibration, respectively, of Si-O-Si.[1] The peaks at 682.46 cm^{-1} and 644.49 cm^{-1} are due to the vibration of the Si-O bonds in silicate tetrahedra with a bending mode at 564.17 cm^{-1}.[2]

References

1. S. Dong, J. Sun, Y. Li, J. Li, W. Cui and B. Li, Mater. Sci. Eng., C, 2014, 35, 426-433. 2.
2. L. A. Adams, E. R. Essien, A. T. Adesalu and M. L. Julius, J. Sci.: Adv. Mater. Dev., 2017, 2, 476-482.

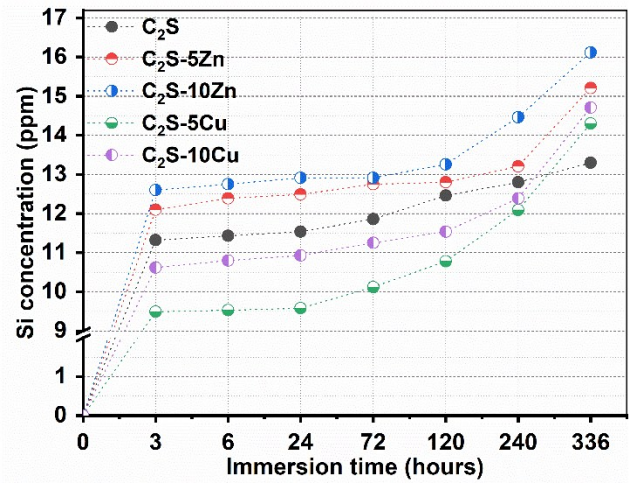

Figure S2. Concentration of Si ions during bio-dissolution of the cement powders in Tris–HCI buffer.

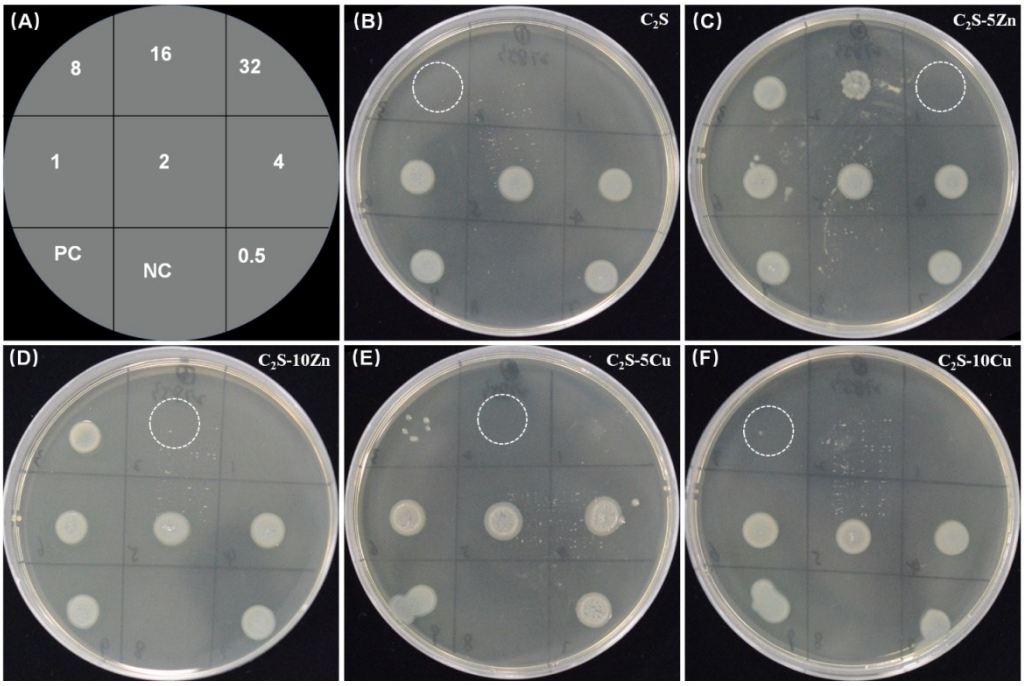

Figure S3. MBC (mg ml^{-1}) of the C_2S, C_2S-xZn and C_2S-xCu cements. (A) Schematic illustration of MBC of the samples; PC, positive control; NC, negative control; (B) The image of MBC of the C_2S; (C) The image of MBC of the C_2S-5Zn; (D) The image of MBC of the C_2S-10Zn; (E) The image of MBC of the C_2S-5Cu; (F) The image of MBC of the C_2S-10Cu.

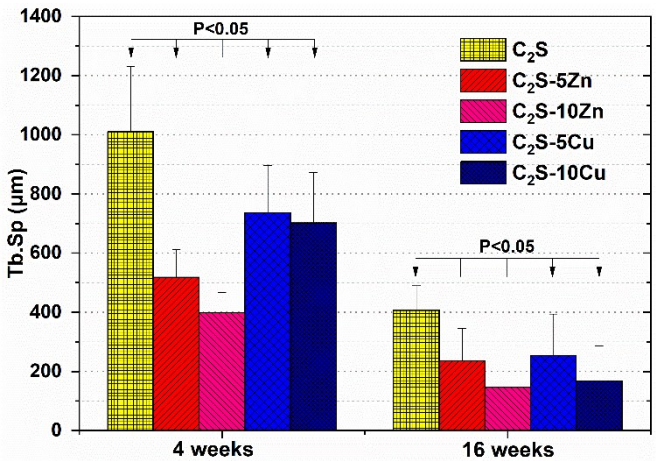

Figure S4. Quantitative analysis of Tb.Sp values of new bone formation in mandibular defect by μCT.

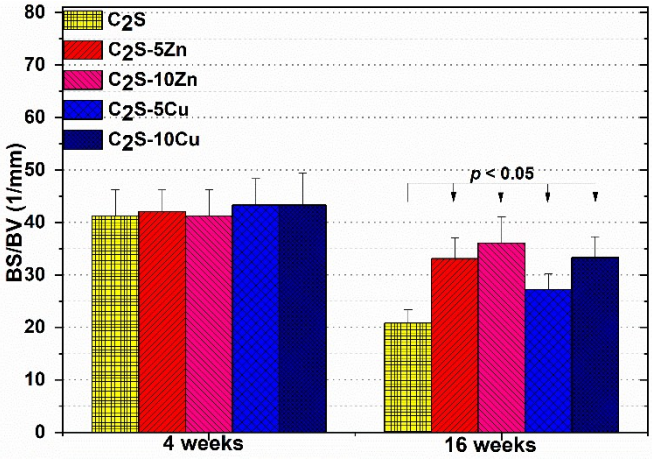

Figure S5. Quantitative analysis of BS/BV values of new bone formation in mandibular defect by μCT.

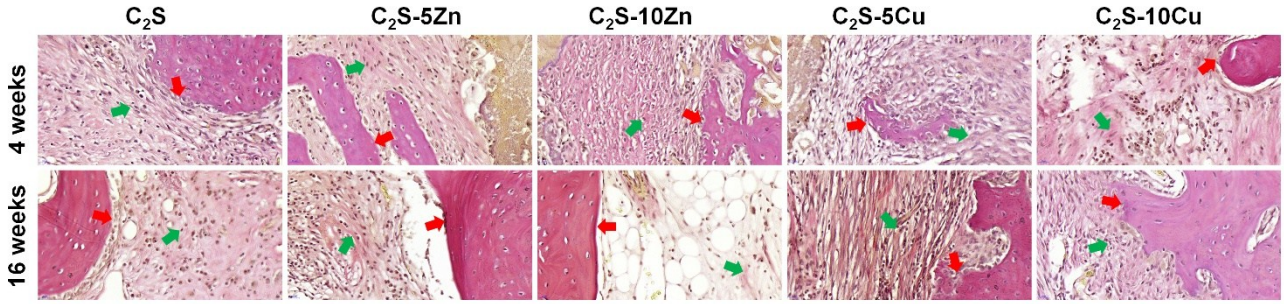

Figure S6. Histological images with high magnification via Von-Gieson staining of the mandibular defect in rabbits at 4 w and 16 w after filling of the cements. Red arrow: osteoblasts; Green arrow: fibroblasts.

Table S1. Minimal inhibitory concentration (mg ml^{-1}) of the C_2S, C_2S-xZn and C_2S-xCu powders

Groups	Minimal inhibitory concentration (mg/mL)			
	S. aureus	*E.coli*	*P. Aeruginosa*	*E. faecalis*
C_2S	4	8	8	16
C_2S-5Zn	4	16	8	32
C_2S-10Zn	8	16	8	32
C_2S-5Cu	8	8	8	16
C_2S-10Cu	8	8	8	16