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Effect of boron incorporation on the bioactivity, structure, and mechanical properties of ordered mesoporous bioactive glasses

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Table S1. Represents the optimized ICP parameters used for determination of calcium, phosphorus, sulfur and boron

RF power	1300 W
nebulizer gas flow	0.7 L min^{-1} argon
cooling gas flow	12 L min^{-1} argon
auxiliary gas flow	0.8 L min^{-1} argon
viewing height above load-coil	12 mm
Ca 315.887 nm	Si 251.611 nm
P 214.914 nm	B 249.773 nm
N 174.272 nm	*
P 213.618 nm	P 178.284 nm
S 182.034 nm	S 180.731 nm
C 175.183 nm	C 193.091 nm

* N has only one useful emission line in the spectral range investigated

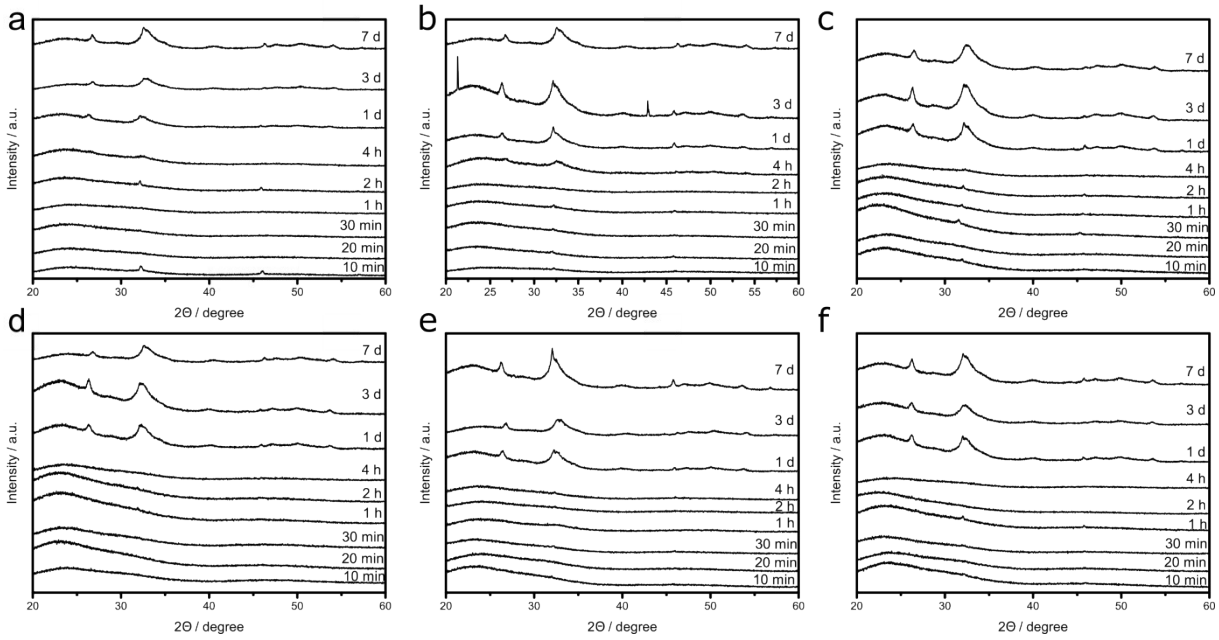

Figure S1. Temporal evolution of X-ray powder diffraction patterns after soaking boron-doped MBGs with concentrations of a) 0.5, b) 1.0, c) 3.0, d) 5.0, e) 10.0, and f) 15.0 mol% B_2O_3 in SBF. The occasionally visible spikes are due to instrumental reasons.

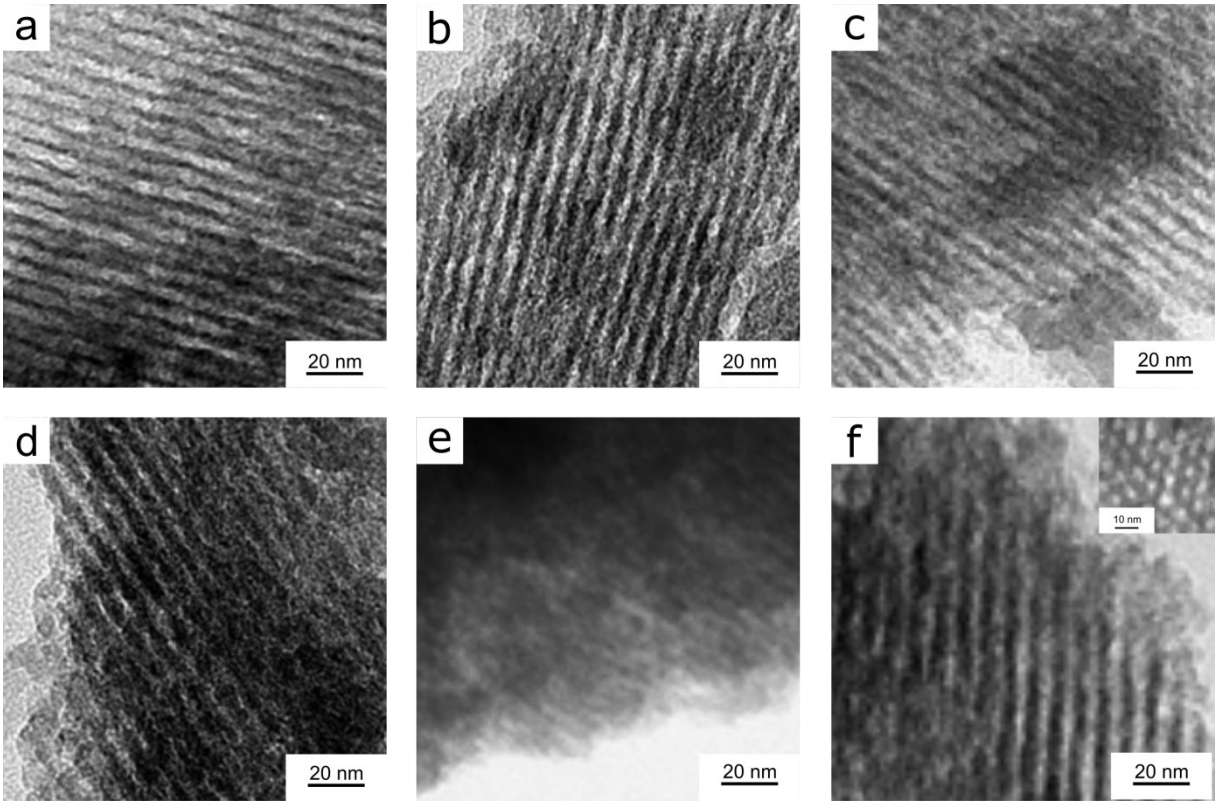

Figure S2. TEM images of boron-doped MBGs with concentrations of a) 0.5, b) 1.0, c) 3.0, d) 5.0, e) 10.0, and f) 15.0 mol% B_2O_3.

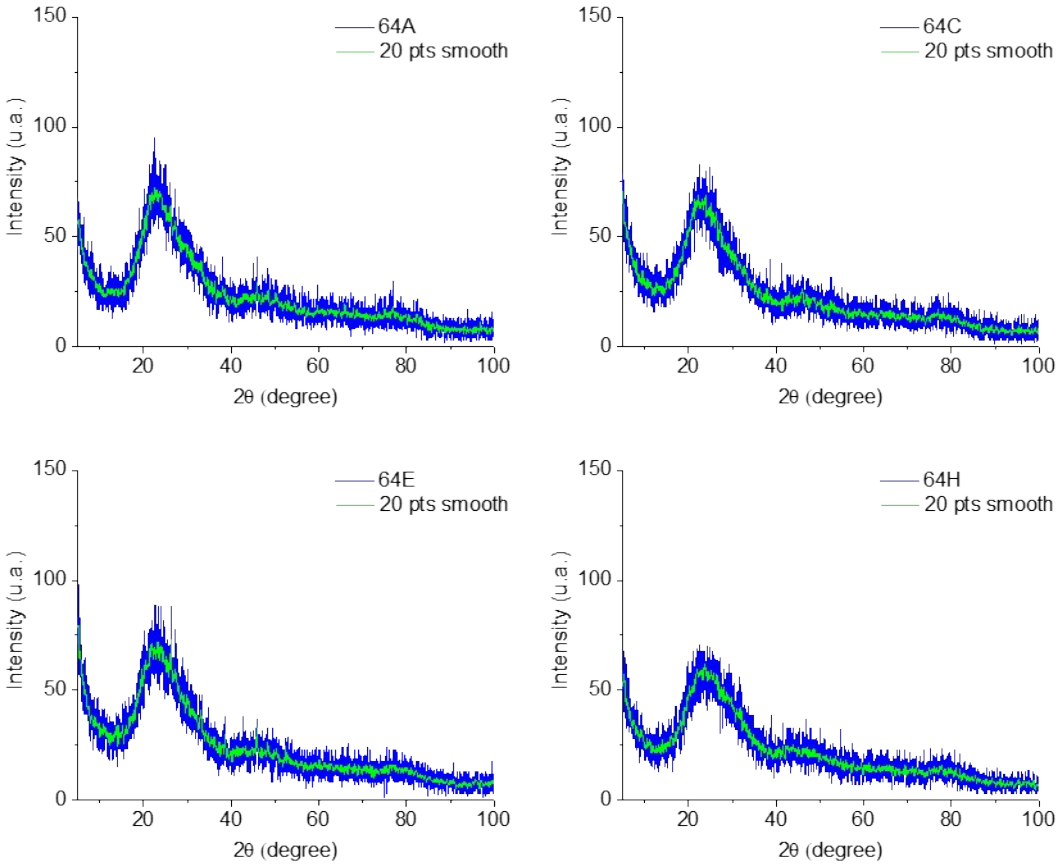

Figure S3. Small-angle XRD of MBG samples with 0, 1, 5, and 15% B_2O_3 content, indicating no significant changes in pore ordering..

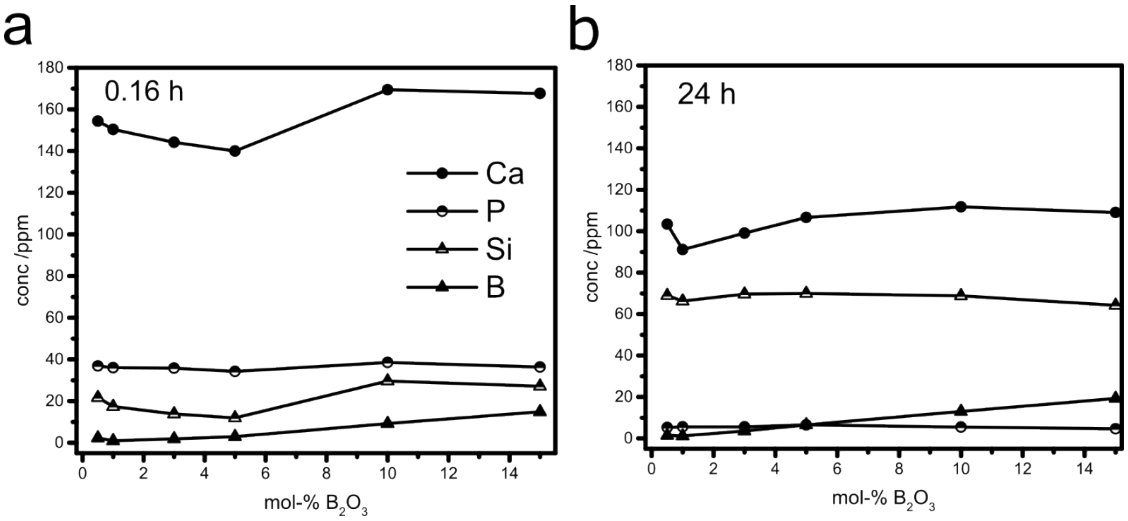

Figure S4. Ca, P, Si, and B release/increase after a) 10 min and b) 24 h for the glasses with different concentrations of 0.5, 1.0, 3.0, 5.0, 10.0, and 15.0 mol% B_2O_3.

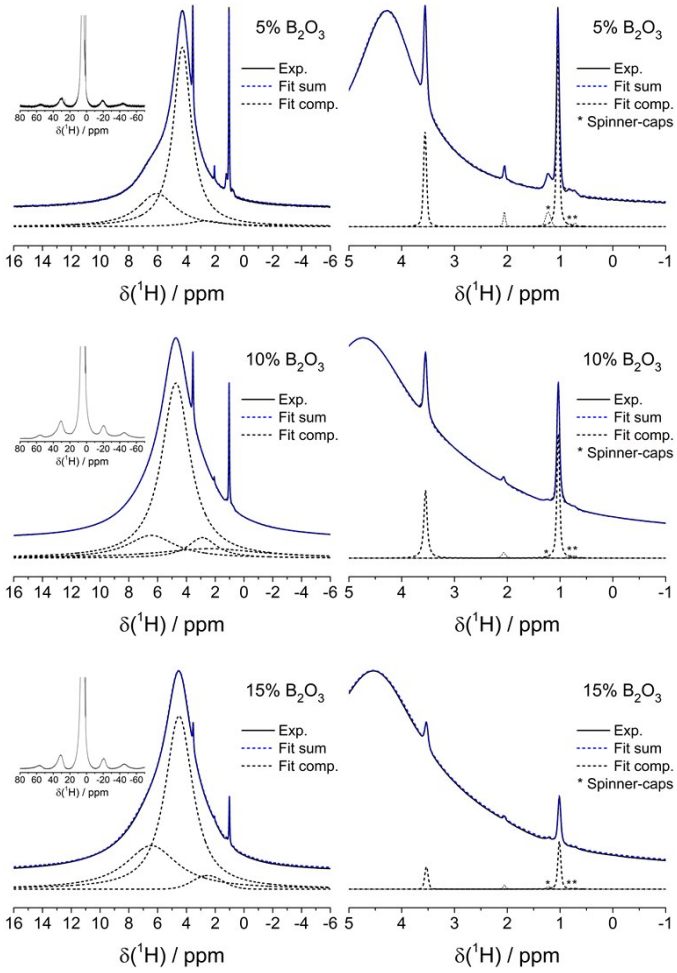

Figure S5.. Experimental and simulated ^{1}H MAS-NMR spectra of B_2O_3 doped MBGs.

Table S2. Deconvolution parameters used in the simulation of the ^{1}H MAS-NMR spectra of B_2O_3 doped MBGs

mol% B_2O_3	Component	δ_{iso} / ppm ± 0.01	*FWHM* / ppm ± 0.01	G / L ratio	Area fractions / % ± 1%
5.0	1	3.56	0.07	0.58	31
	2	2.05	0.05	0.24	4
	3	1.04	0.06	0.39	56
	4*	1.23	0.12	0.90	7
	5*	0.72	0.07	0.95	1
	6*	0.82	0.10	0.90	1
10	1	3.55	0.07	0.05	38
	2	2.07	0.08	0	4
	3	1.03	0.06	0.34	54
	4*	1.25	0.07	0.90	1
	5*	0.72	0.07	0.95	1
	6*	0.82	0.10	0.90	2
15	1	3.53	0.08	0.84	28
	2	2.05	0.05	0	6
	4	1.01	0.13	0.48	6
	4*	1.21	0.07	1	4
	5*	0.80	0.07	0.95	1
	6*	0.71	0.07	0.90	1