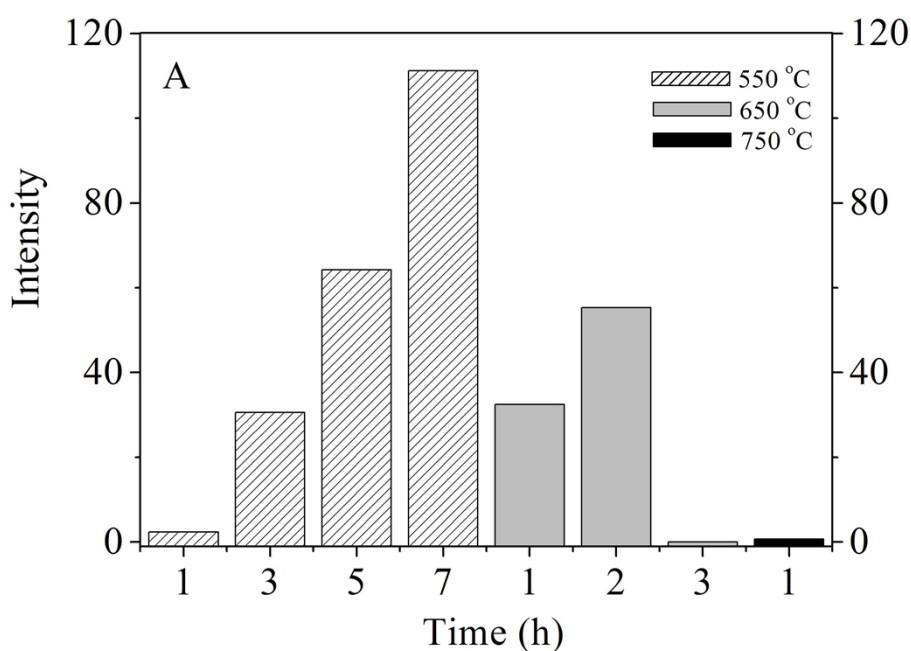


Supporting information

The phosphorescence intensities and experimental conditions are summarized in Fig.S-1. It is clear that the emission intensity change with the experimental conditions and increases apparently with the B/Si molar ratio increasing from 1/9 to 1/3. When the B/Si molar ratio is 2/3, the maximal phosphorescence intensities was obtained when calcined at 650 °C for 2 hours, which was coincident with the sample obtained when the B/Si molar ratio is 1/3 and calcined at 550 °C for 3 hours (as shown in Fig. S-3). Furthermore, black solid material without PP will be obtained when the boron concentration above 40%. Therefore, the sample used in this paper was obtained when the B/Si molar ratio is 1/3 and calcined at 550 °C for 3 hours.



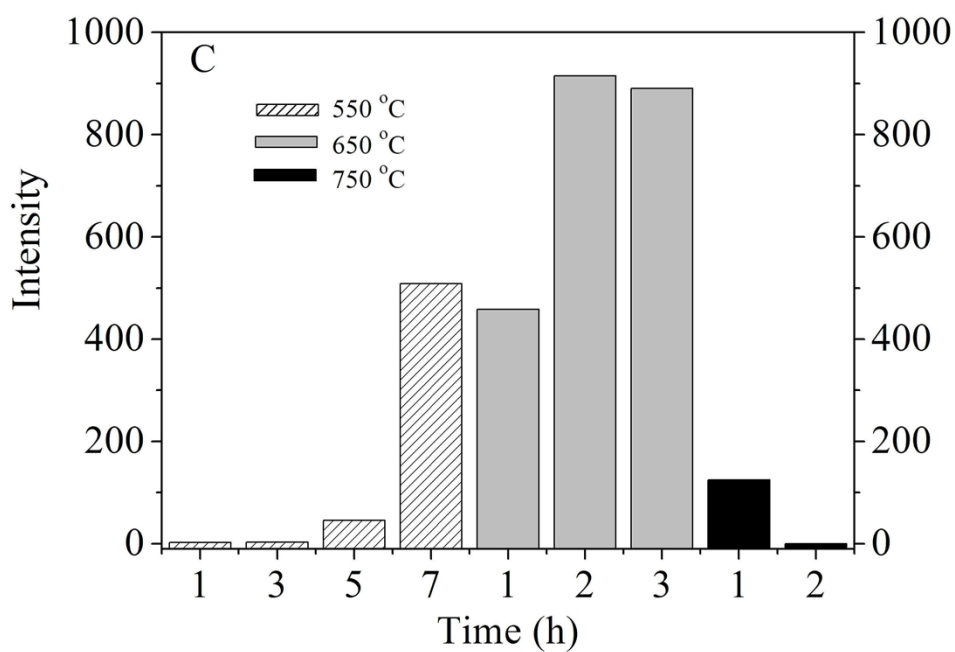
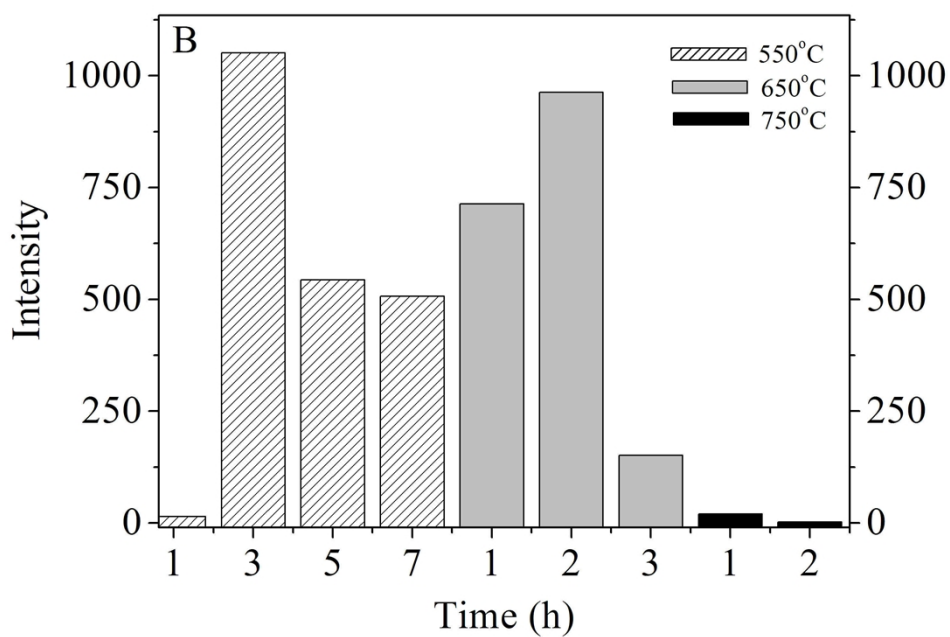


Fig.S-1 the phosphorescence emission intensity obtained at 540 nm under different calcination temperature and durations. (A) B/Si molar ratio is 1/9; (B) B/Si molar ratio is 1/3; (A) B/Si molar ratio is 2/3.

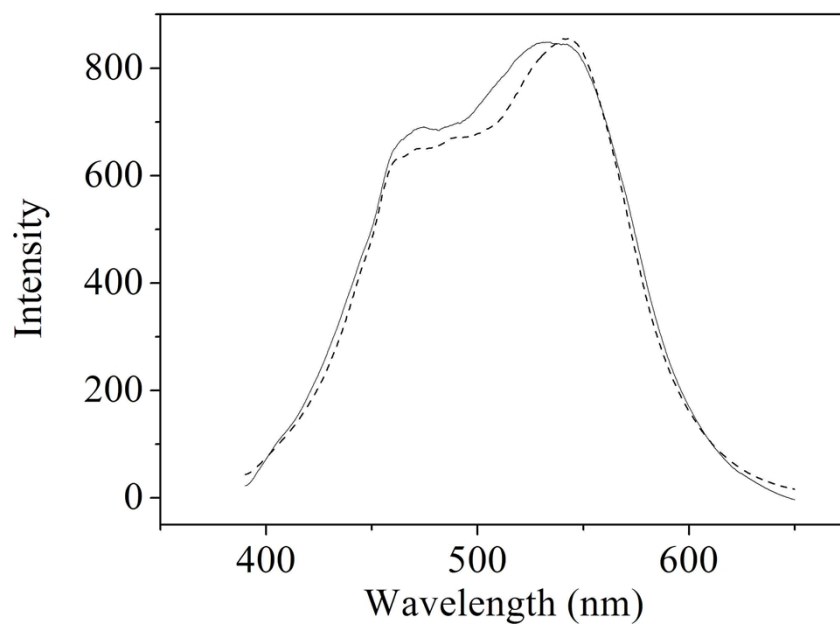


Fig. S-2 Room temperature phosphorescence emission spectrum of the obtained solid. Dash line: B/Si molar ratio is 1/3 and the calcination was performed at 550°C for 3 hour; solid line: B/Si molar ratio is 40% and the calcination was performed at 650°C for 2 hour.