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Simple, efficient and reliable method for the preparation of β-tricalcium phosphate

Ilya E. Nifant'ev, Victoria K. Besprozvannykh, Andrei V. Shlyakhtin, Alexander N. Tavtorkin, Maria P. Smirnova, Ivan S. Levin and Pavel V. Ivchenko

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S1. Reference data: Phase diagram of $CaO-P_2O_5$

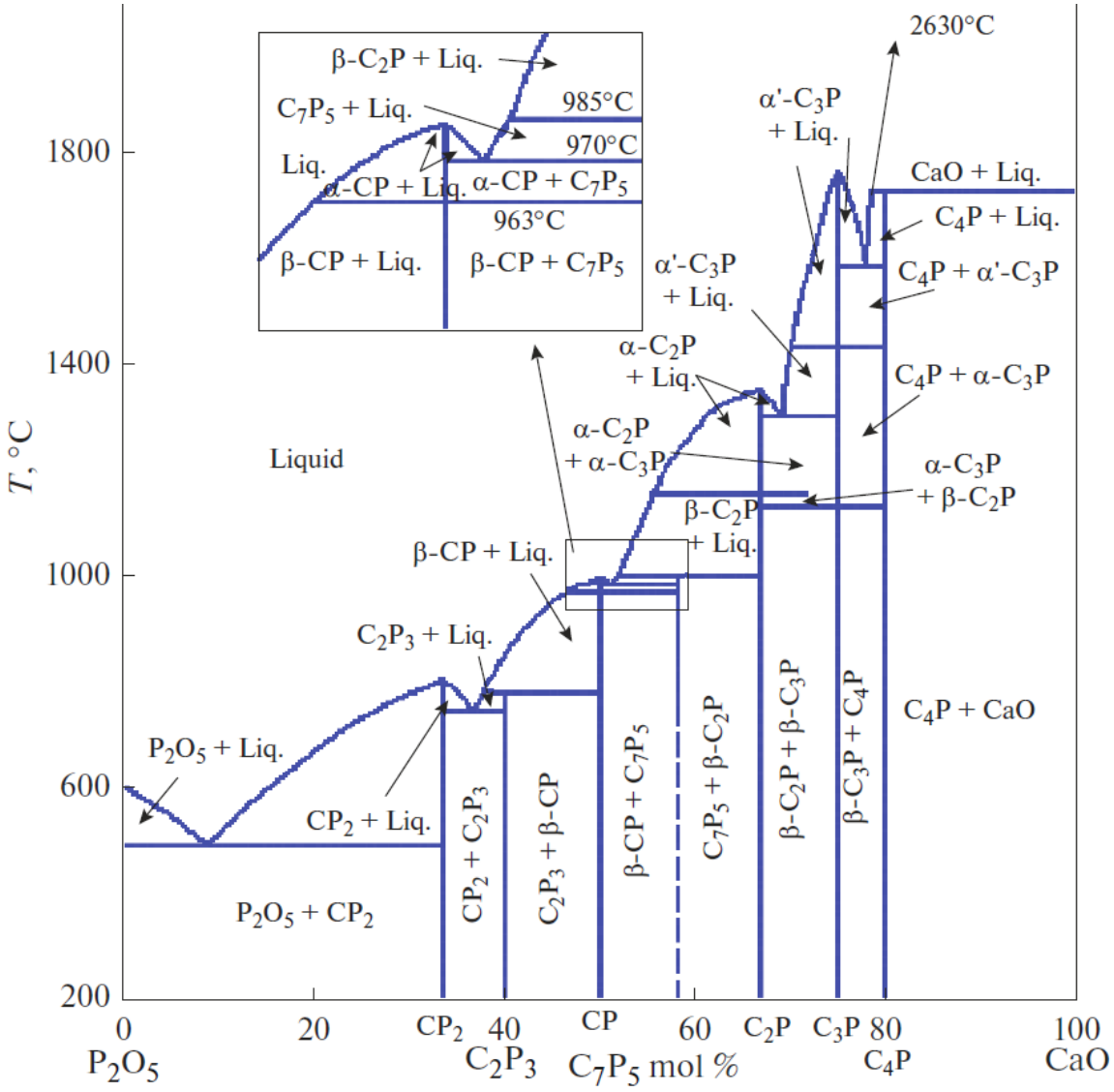

Figure S1 Phase diagram of $CaO-P_2O_5$[S1].

References

[S1] V. I. Putlyaev and T. V. Safronova, *Inorg. Mater.*, 2019, **55**, 1328.

S2. Equipment

The use of high-temperature electric owen with precision temperature control is critical for obtaining of high-quality materials. In our experiments, we used the owen SNOL 12/16T, maximum temperature 1650 °C (VNIIETO, Istra, Russia).

Figure S2 Electric owen SNOL 12/16T.

S3. X-ray diffraction data

XRD patterns were obtained with Rotaflex RU-200 X-ray source (Rigaku, Japan) with rotating anode tube (CuKα radiation, 50 kV and 160 mA mode) equipped with a horizontal wide-angle goniometer Rigaku D/Max-RC with Bragg-Brentano θ-2θ geometry at angle range 2θ = 10-60°, step 0.02°, continuous scan rate 1°/min.

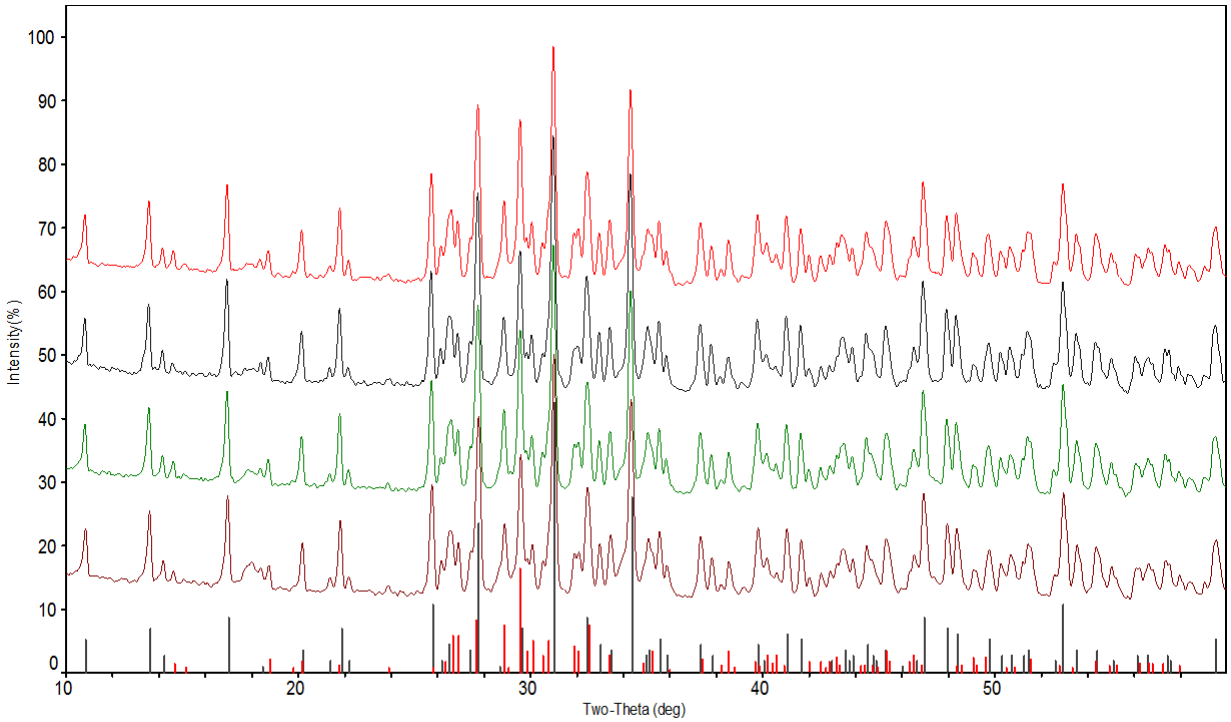

Figure S3 XRD patterns of TCP obtained after sintering at 1000 °C for 5 h using stochiometric $CaHPO_4/CaCO_3$ ratio and 10%, 15% and 20% excess of $CaHPO_4$ (upwards) along with standards CPP (red lines) and β-TCP (black lines) as a reference.

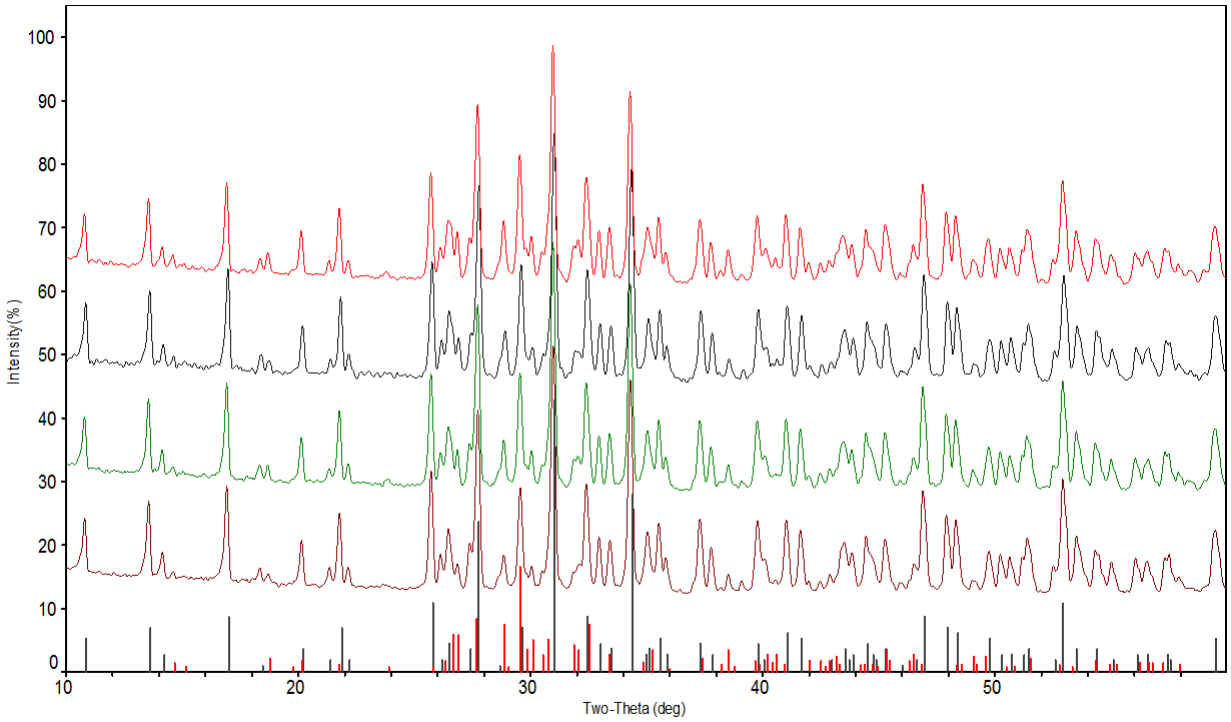

Figure S4 XRD patterns of TCP obtained after sintering at 1000 °C for 10 h using stochiometric $CaHPO_4/CaCO_3$ ratio and 10%, 15% and 20% excess of $CaHPO_4$ (upwards) along with standards CPP (red lines) and β-TCP (black lines) as a reference.

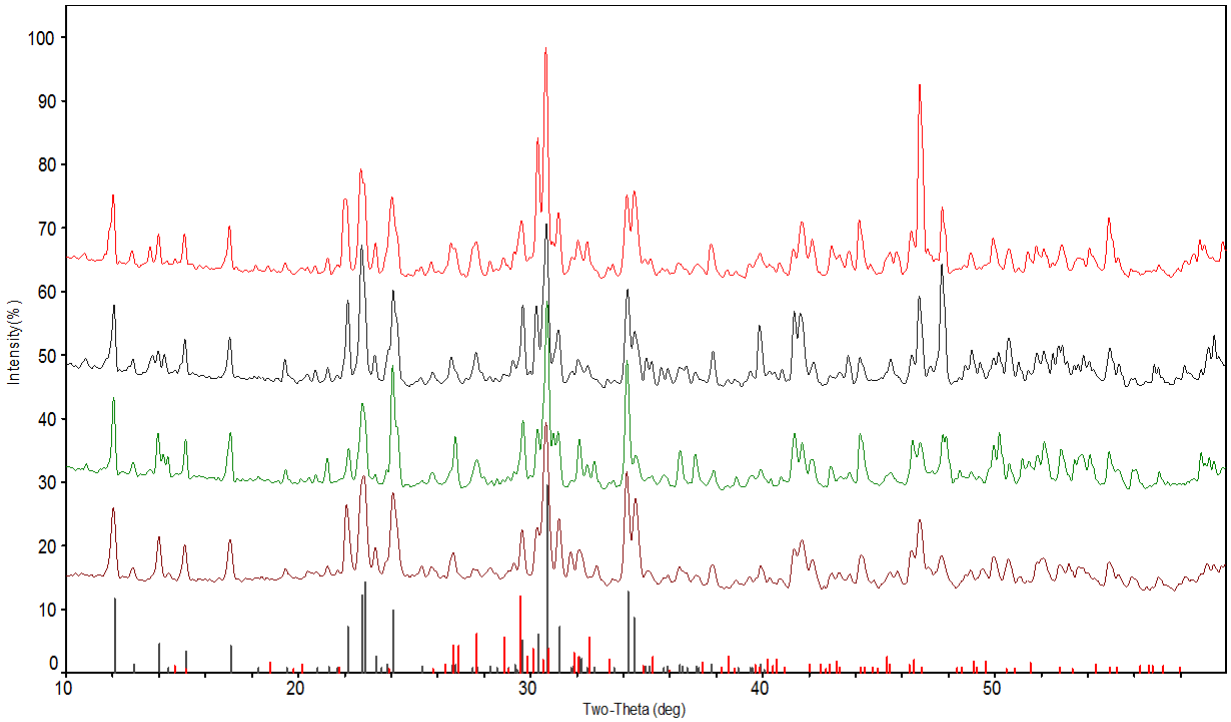

Figure S5 XRD patterns of TCP obtained after sintering at 1350 °C for 5 h using stochiometric $CaHPO_4/CaCO_3$ ratio and 10%, 15% and 20% excess of $CaHPO_4$ (upwards) along with standards CPP (red lines) and α-TCP (black lines) as a reference.

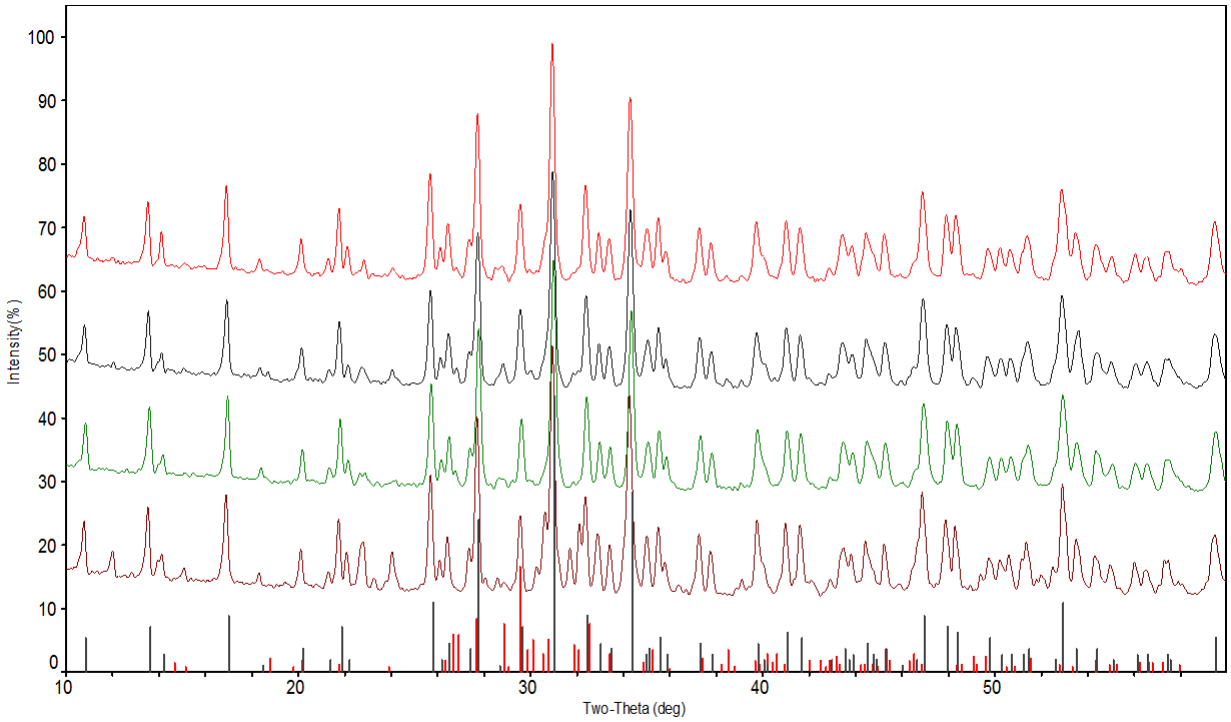

Figure S6 XRD patterns of TCP obtained after the second sintering at 850 °C for 5 h using stochiometric $CaHPO_4/CaCO_3$ ratio and 10%, 15% and 20% excess of $CaHPO_4$ (upwards) along with standards CPP (red lines) and β-TCP (black lines) as a reference.