

# Supporting Information

## Calcium phosphate nanoparticles precipitation by a continuous flow process: A design of experiment approach.

*Lorenzo Degli Esposti<sup>a,†</sup>, Alessandro Dotti<sup>b,†</sup>, Alessio Adamiano<sup>a</sup>, Claudia Fabbi<sup>b</sup>, Eride Quarta<sup>c,d</sup>, Paolo Colombo<sup>d</sup>, Daniele Catalucci<sup>e,f</sup>, Claudio De Luca<sup>b,\*</sup>, Michele Iafisco<sup>a,\*</sup>*

<sup>a</sup> Institute of Science and Technology for Ceramics (ISTEC), National Research Council (CNR),  
Via Granarolo 64, 48018 Faenza (Italy)

<sup>b</sup> Fin-Ceramica Faenza SPA, Via Granarolo 177/3, 48018 Faenza (Italy)

<sup>c</sup> Food and Drug Department, University of Parma, Parco Area delle Scienze 27/A, 43124 Parma,  
(Italy)

<sup>d</sup> Plumestars srl, Strada Inzani 1, 43125 Parma, (Italy)

<sup>e</sup> Humanitas Clinical and Research Center, IRCCS, Rozzano, (Italy)

<sup>f</sup> Institute of Genetic and Biomedical Research (IRGB) - UOS, National Research Council (CNR),  
Milan, (Italy)

<sup>†</sup>These authors contributed equally to this work.

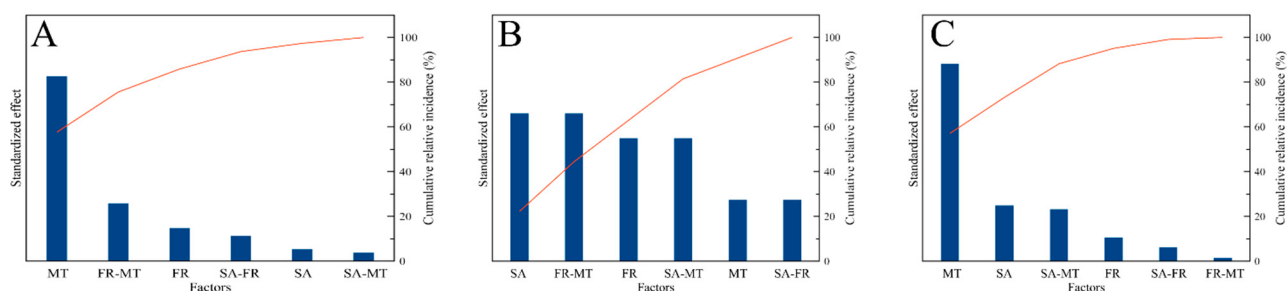
### Corresponding Authors

\*Dr. Michele Iafisco, Ph. D.

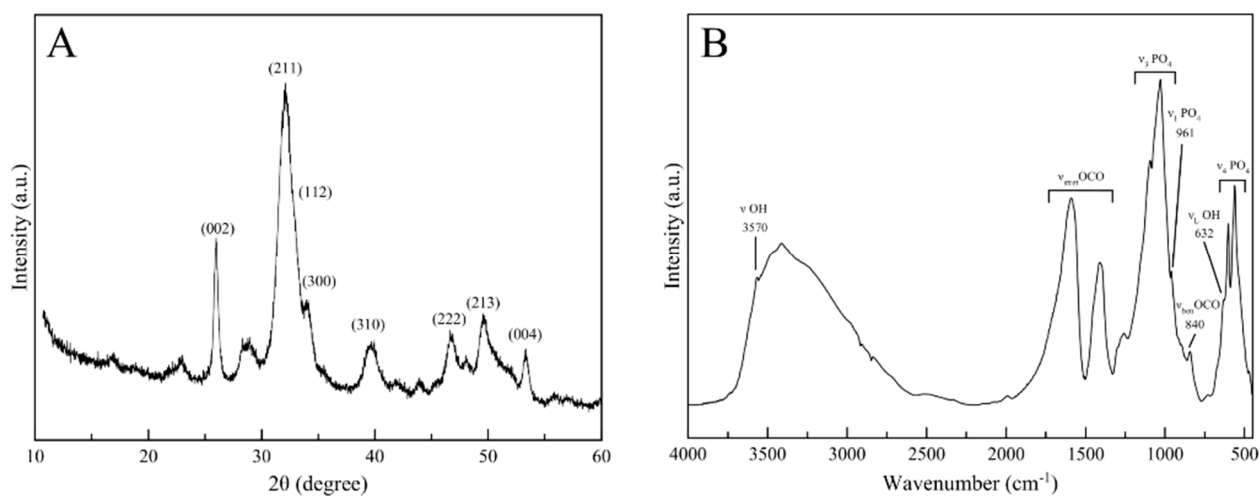
Institute of Science and Technology for Ceramics (ISTEC) National Research Council (CNR), Via Granarolo 64, 48018 Faenza (RA), Italy. E-mail: michele.iafisco@istec.cnr.it

\*Dr. Claudio De Luca, Ph. D.

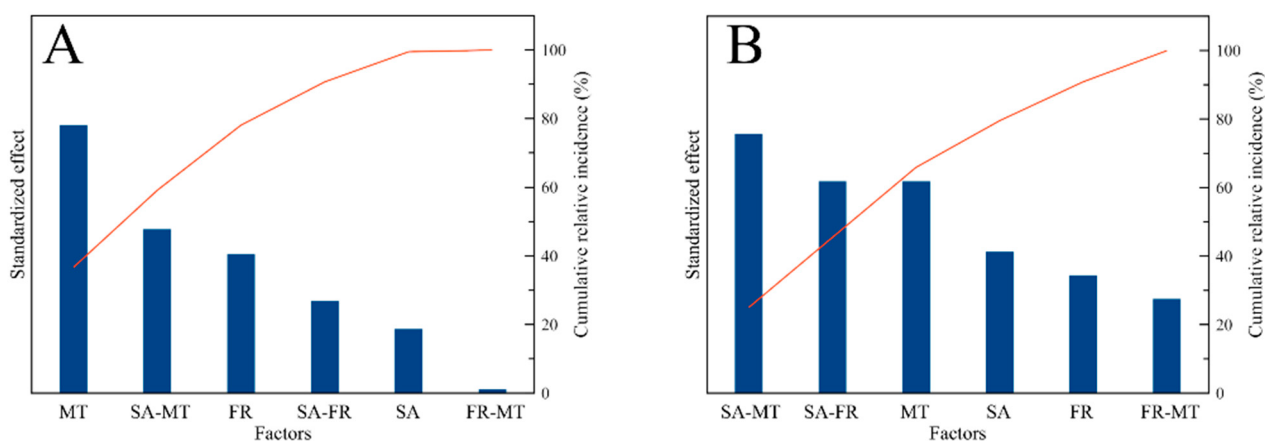
Fin-Ceramica Faenza SPA, Via Granarolo 177/3, 48018 Faenza (Italy), E-mail: cdeluca@finceramica.it



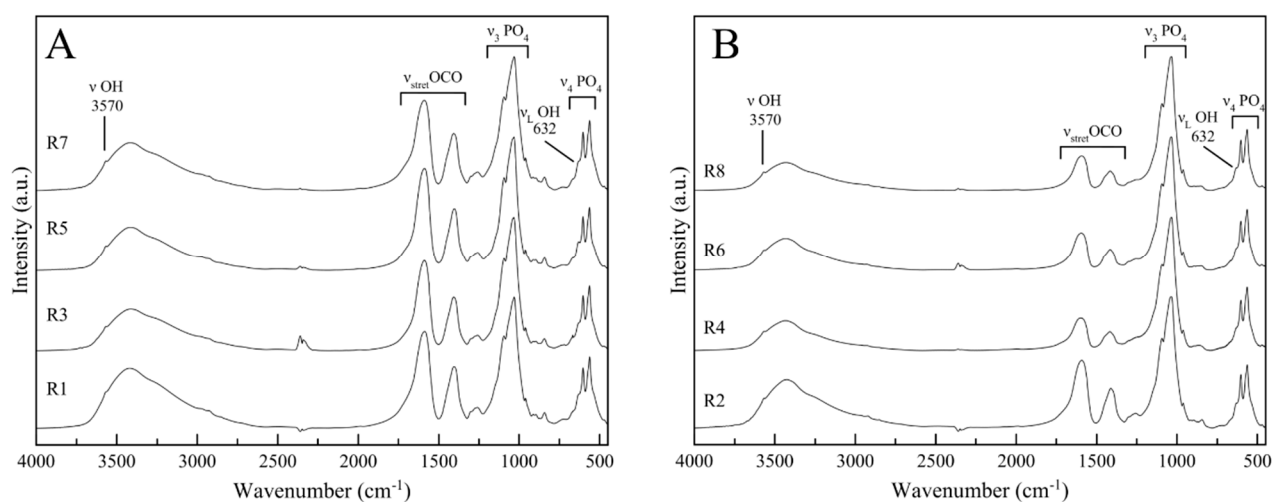
**Figure S1.** Pareto chart of all standardized effects and their cumulative relative incidence for (A)  $D_{(002)}$  crystalline domain, (B)  $D_{(310)}$  crystalline domain, and (C)  $D_{(002)}/D_{(310)}$  ratio.



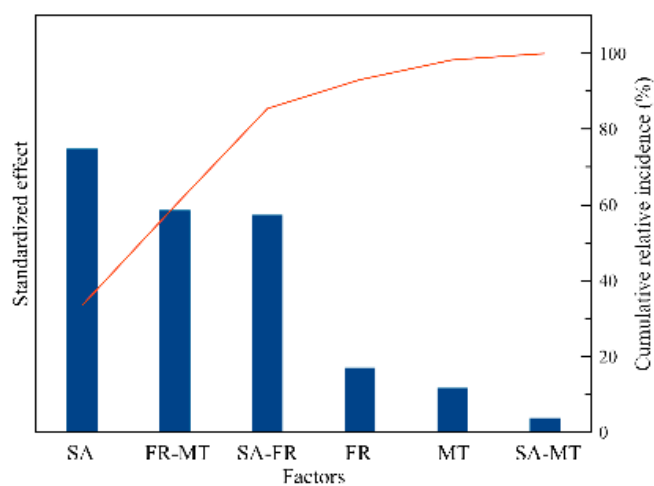
**Figure S2.** (A) PXRD pattern and (B) FT-IR spectrum in the 4000 – 400  $\text{cm}^{-1}$  region of the batch CaP NPs.



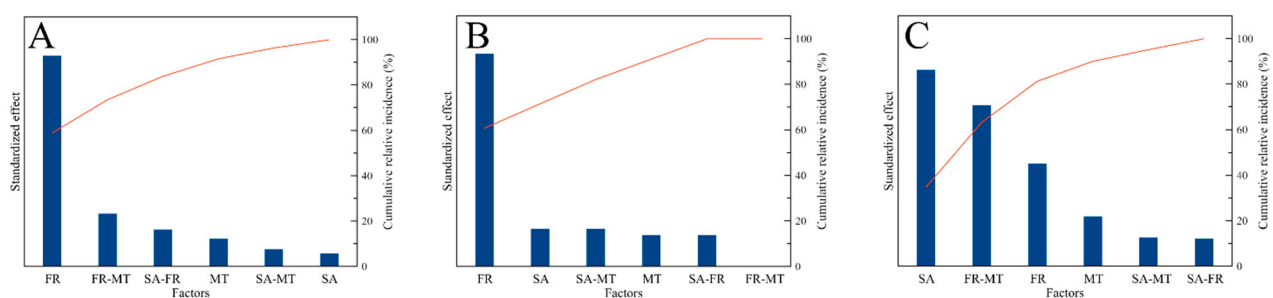
**Figure S3.** Pareto chart of all standardized effects and their cumulative relative incidence for (A) Ca/P ratio, and (B) yield.



**Figure S4.** FT-IR spectra of the samples in the 4000 – 400 cm<sup>-1</sup> region. (A) odd-numbered runs, (B) even-numbered runs.



**Figure S5.** Pareto chart of all standardized effects and their cumulative relative incidence for the splitting factor.



**Figure S6.** Pareto chart of all standardized effects and their cumulative relative incidence for (A) Z-average, (B) Pdl, and (C) ζ-potential.