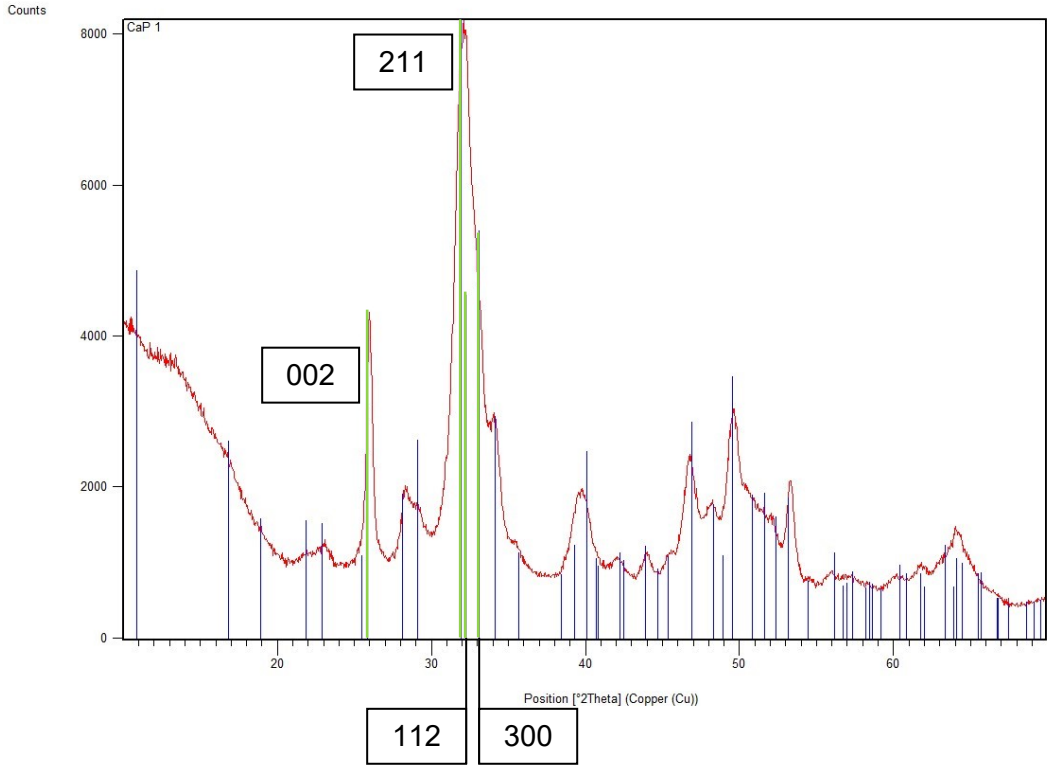
Appendices

The relative calcium concentrations in these calcium phosphate materials were used to calculate the wt % of cumulative calcium release in Fig. 1(C). They were effectively the same, shown by the elemental analysis in Appendix A below.

Appendix A. Concentration of Ca^{2+} (g/L) fully released from 200 mg of CPNPs measured by ICP-MS and TXRF (n=3)

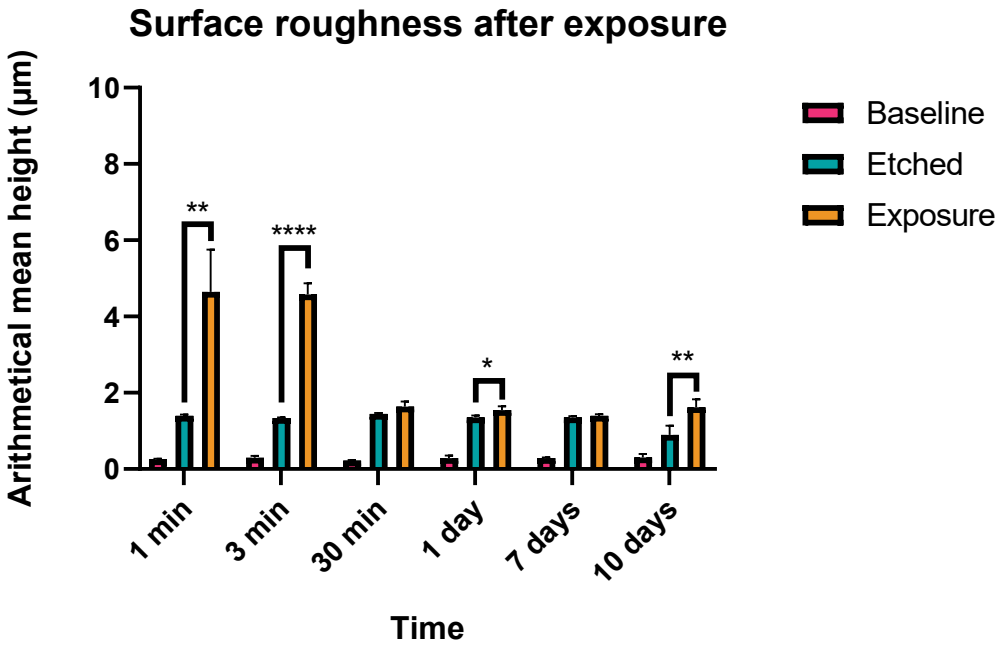
Calcium phosphate	Concentration of Ca^{2+} (g/L) fully released from 200 mg of CPNP	
	ICP-MS	TXRF
CPNPs	7.5 ± 0.37	5.7 ± 0.52
Sigma HA	8.0 ± 0.05	6.2 ± 0.31
Sigma ACP	6.8 ± 0.10	5.2 ± 0.12

XRD spectrum in Appendix B below confirms that CPNPs are crystalline due to the diffractions from (002) and (211) faces (2ϑ = 26 ° and 32 ° respectively) of HA that are present within CPNPs, but the broad peak of (211) covering the (112) and (300) diffractions shows that they are of poor crystallinity.

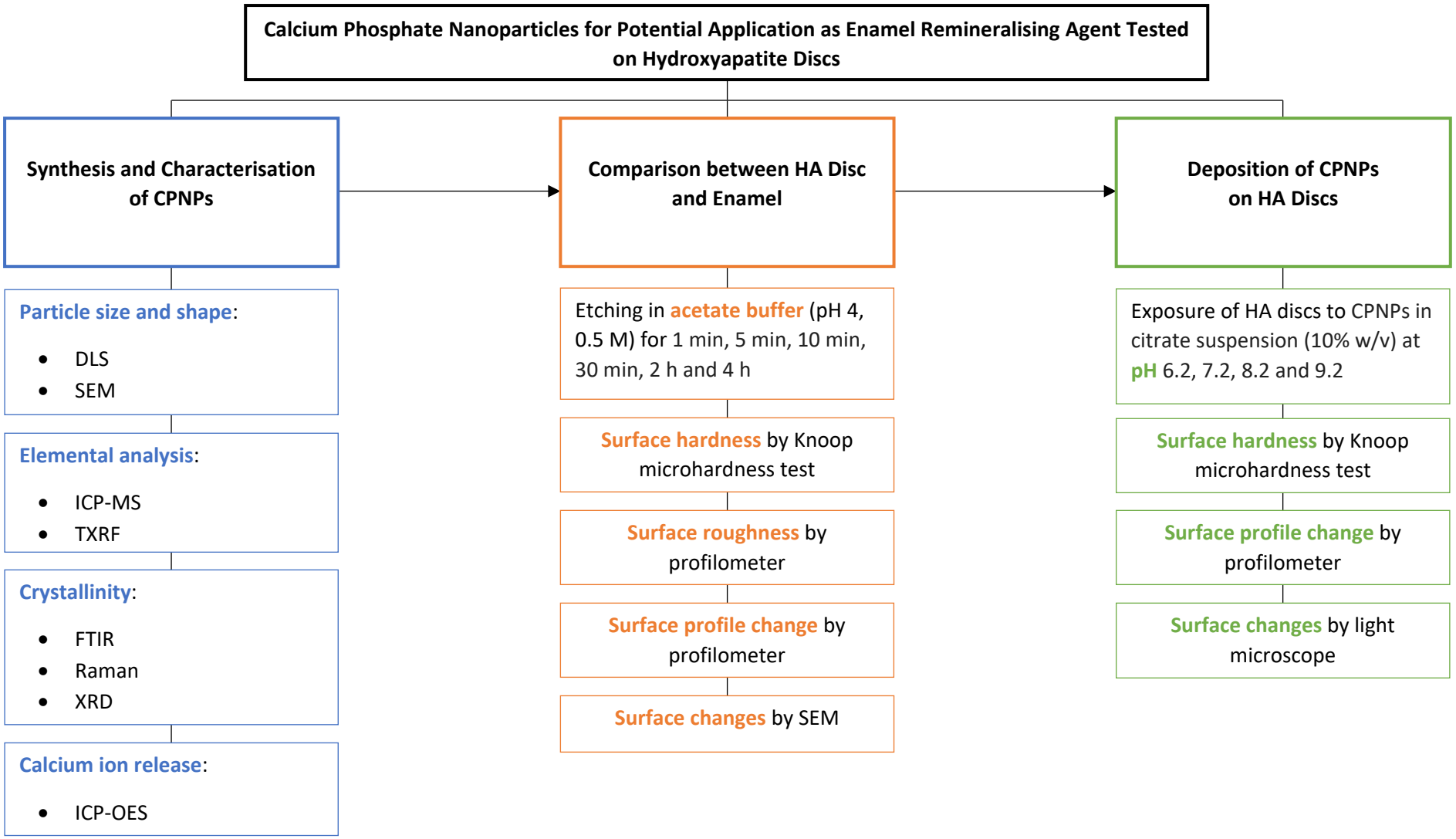


Appendix B. X-ray diffraction spectrum of CPNPs shown in red. The green lines represent main peaks for hydroxyapatite while the blue lines represent other peaks for hydroxyapatite. They match with the sample of synthesised CPNPs

Surface roughness is found to be not suitable as an indicator of remineralisation within limits of our study, compared to surface microhardness and step height, as the trend with surface roughness was inconsistent across multiple durations of exposure to CPNPs, as shown in Appendix C below.



Appendix C. Surface roughness after treatment with CPNPs at different durations after 2-h erosion



Appendix D. Summary of experimental steps involved in the study of calcium phosphate nanoparticles for potential application as enamel remineralising agent tested on hydroxyapatite discs