

Anstisite defects in LiCoPO₄ nanocrystals synthesized via supercritical fluid process

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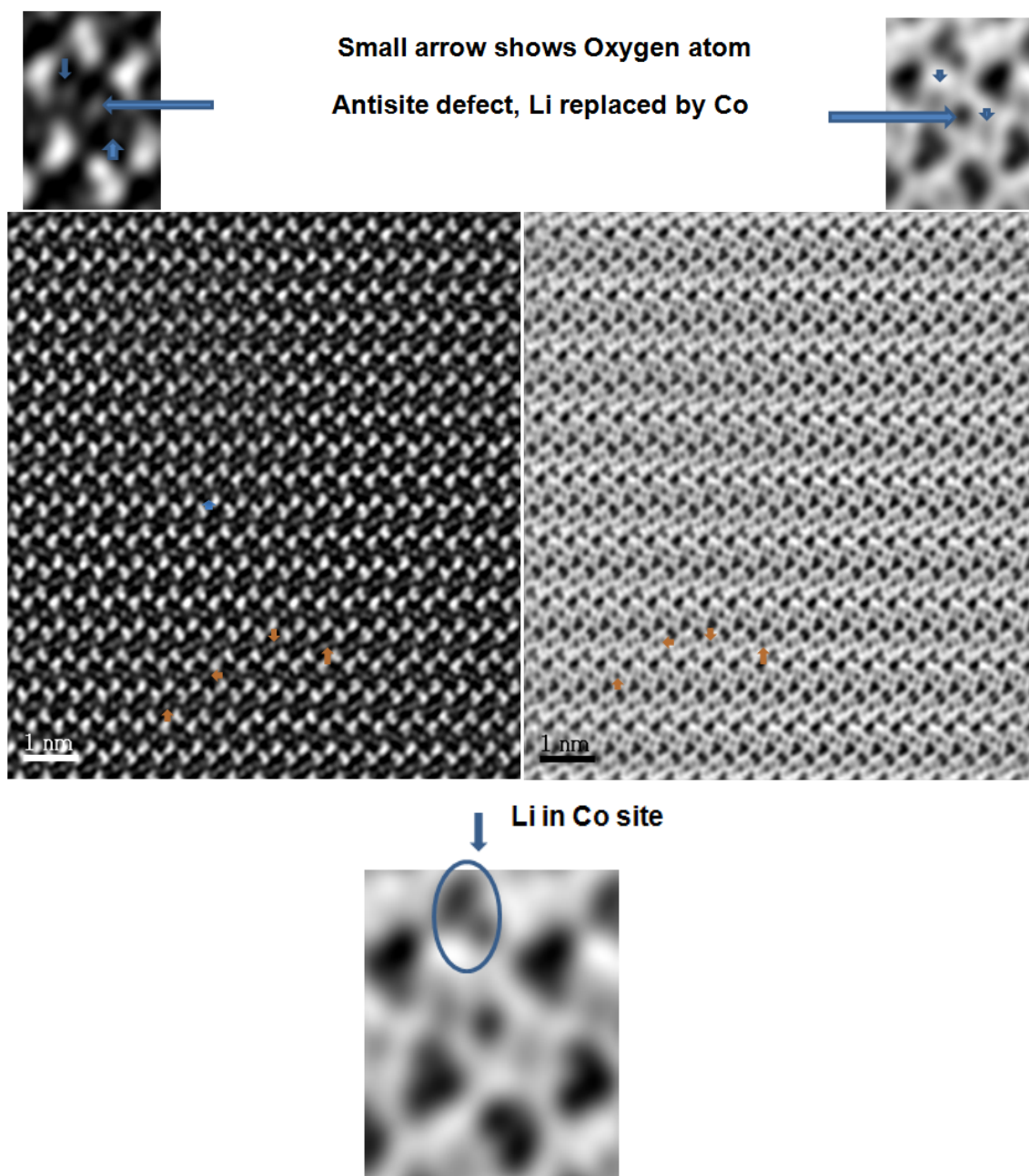


Fig. S1 HAADF and ABF STEM images of LiCoPO_4 nanocrystals viewed along $[010]$ zone direction. The bright/dark contrast show antisite defects which can be viewed through the Li columns, where Li is replaced by Co. In addition, oxygen atoms can also viewed with low contrast as indicated by small arrow marks (enlarged portions). Some of cobalt columns with weaker contrast, indicating the possible exchange by lithium ions at cobalt site.

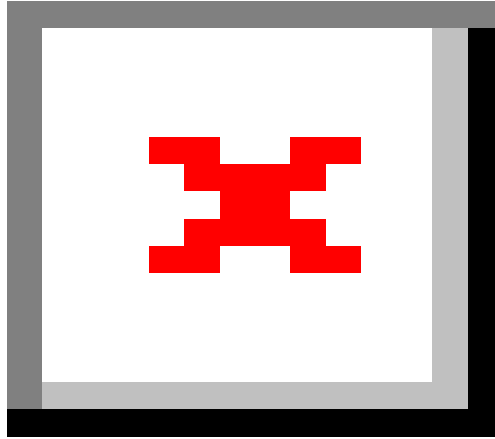


Fig. S2 HAADF and ABF STEM images of LiCoPO_4 nanocrystals viewed along $[101]$ zone direction. The low contrast show in arrow mark (enlarged portion) showing antisite defects which can be viewed through the Li columns, where Li is replaced by Co. In addition, Phosphor atoms can also viewed with low contrast as indicated by small arrow marks on big images.

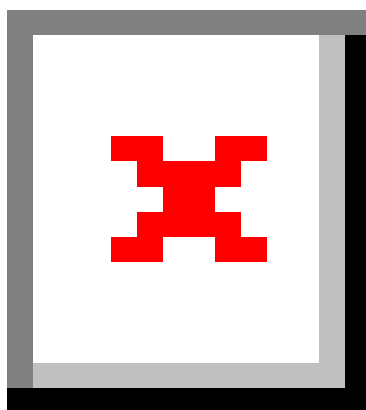


Fig. S3 TEM images of LiCoPO_4 nanocrystals synthesized via supercritical fluid process. The particles showed mixed rod and plate like morphologies with 200-250 nm in diameter and 400-600 nm in length for rod like particles.

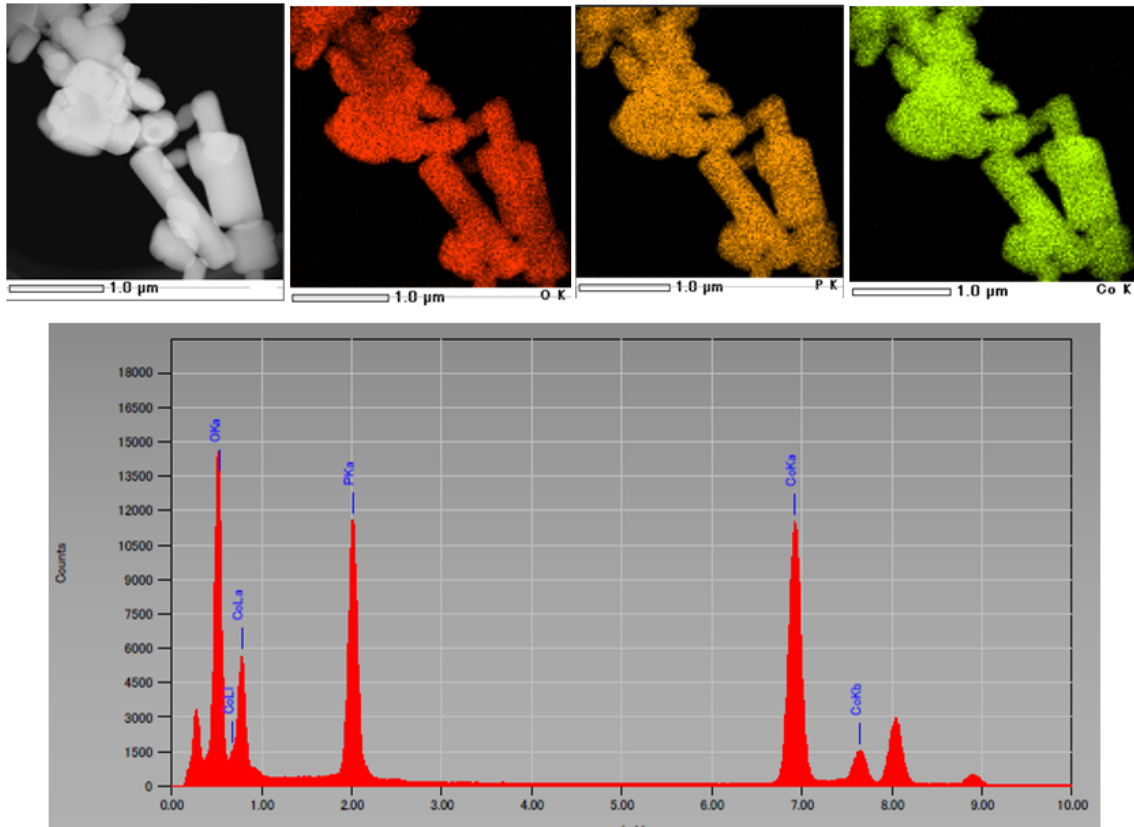


Fig. S4 Elemental mapping by STEM, LiCoPO₄ nanocrystals shows homogenous distribution of Co, P and O elements. EDS spectra show the presence of all the elements and no impurities can be found.