

**Electronic Supplementary Material**

**Remarkable high entropy effect on magnetic behaviour in quadruple perovskites**

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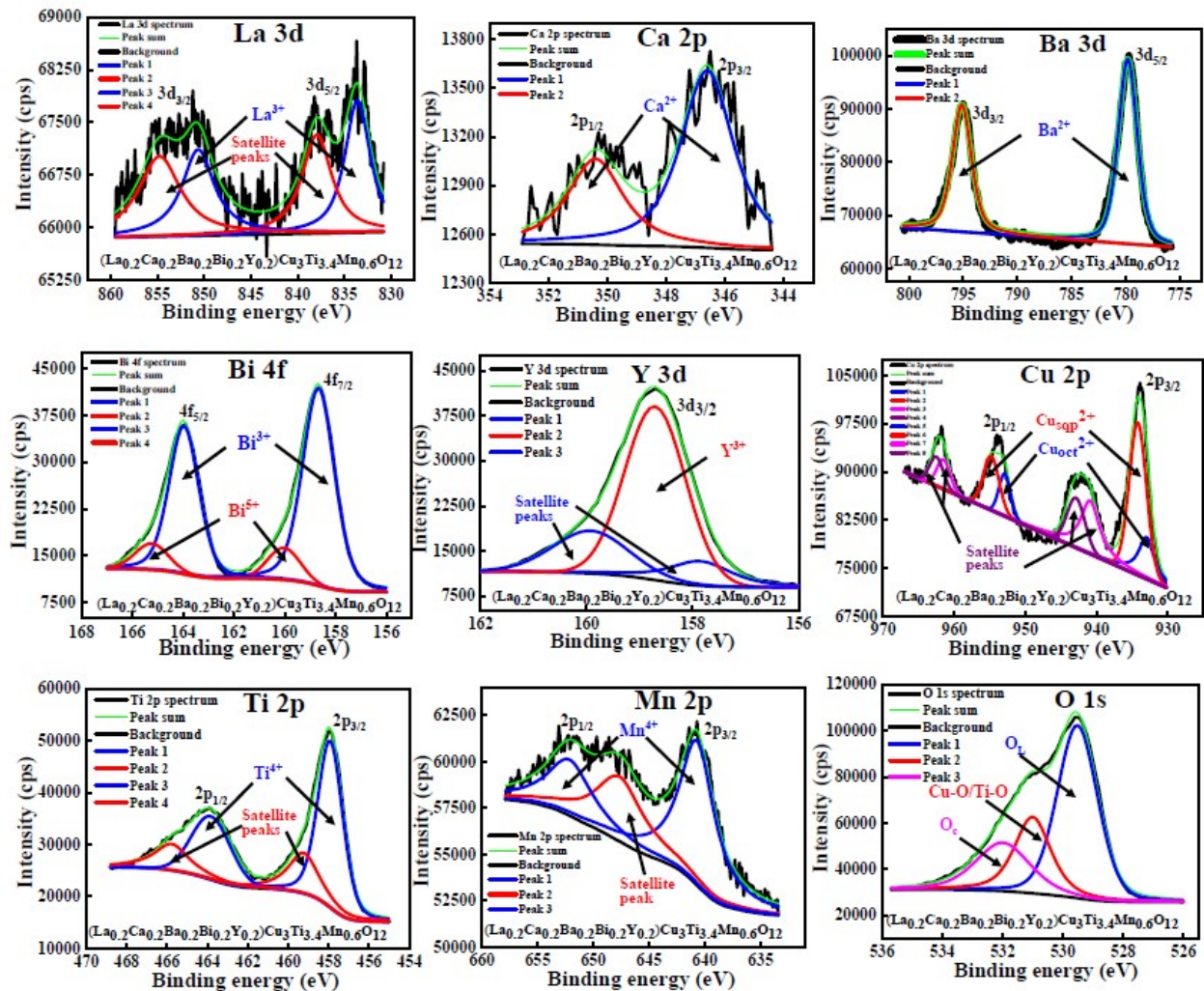
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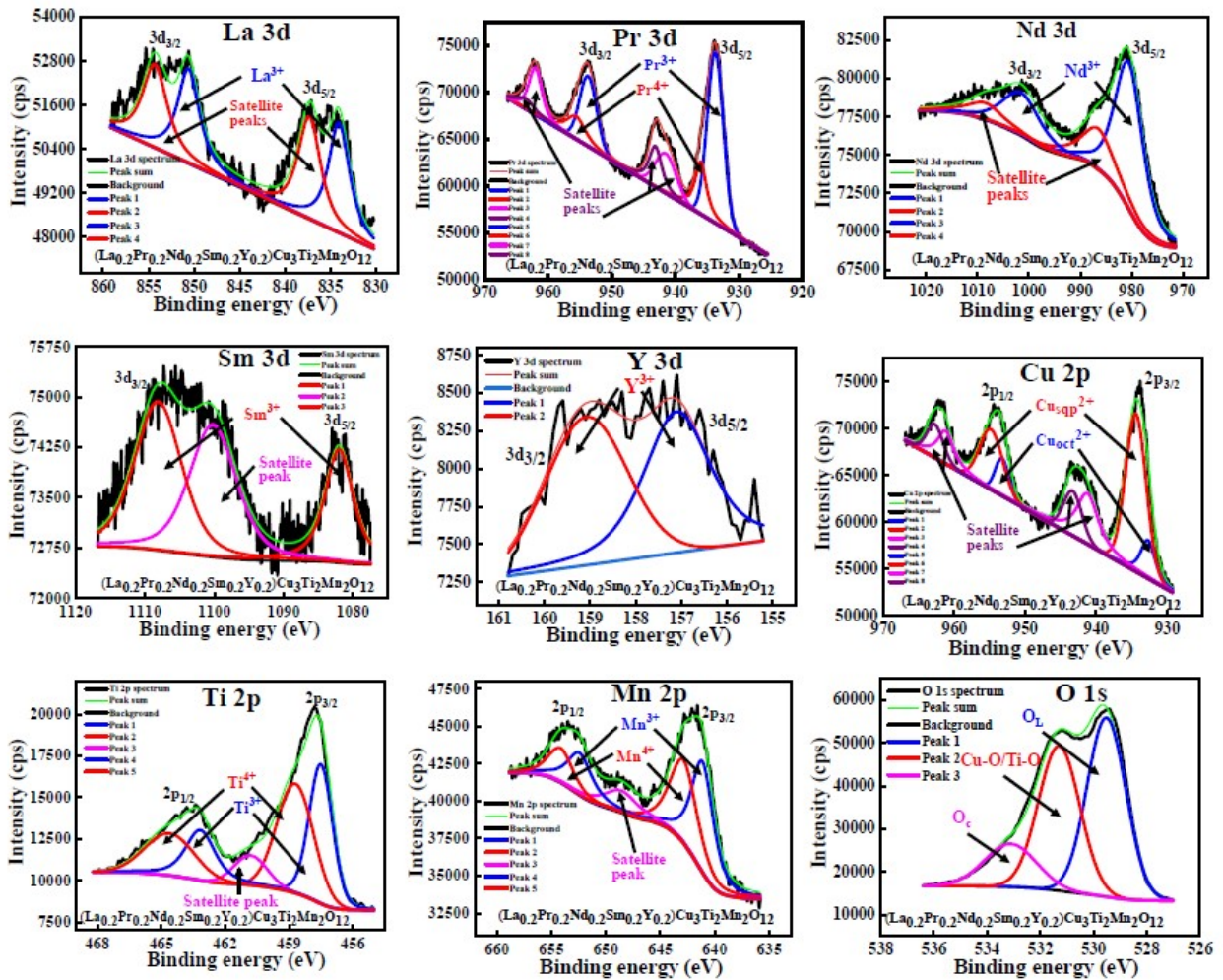
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**Fig. S1:** High resolution XPS spectra of La 3d, Ca 2p, Ba 3d, Bi 4f, Y 3d, Cu 2p, Ti 2p, Mn 2p and O 1s for  $(\text{La}_{0.2}\text{Ca}_{0.2}\text{Ba}_{0.2}\text{Bi}_{0.2}\text{Y}_{0.2})\text{Cu}_3\text{Ti}_{3.4}\text{Mn}_{0.6}\text{O}_{12}$ .



**Fig. S2:** High resolution XPS spectra of La 3d, Pr 3d, Nd 3d, Sm3d, Y 3d, Cu 2p, Ti 2p, Mn 2p and O 1s for  $(\text{La}_{0.2}\text{Pr}_{0.2}\text{Nd}_{0.2}\text{Sm}_{0.2}\text{Y}_{0.2})\text{Cu}_3\text{Ti}_2\text{Mn}_2\text{O}_{12}$ .