



SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	International Research Journal of Pure and Applied Chemistry
Manuscript Number:	2014_IRJPAC_10924
Title of the Manuscript:	Synthesis, characterization and electrochemical studies on $\text{Li}_4\text{Fe}(\text{CN})_6$ as cathode material for Li-ion batteries
Type of the Article	Original Research Article

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments
I investigated the Referee's comment and authors' reply. The authors performed an EDX analysis, which support chemical composition of $\text{Li}_4\text{Fe}(\text{CN})_6$. However, XRD data and origin of plateau remains unsolved.	Due to lack of reference XRD pattern of $\text{Li}_4\text{Fe}(\text{CN})_6$, we are unable to confirm the crystal structure of the material at this point of time. However, we are trying to analyze the crystal structure of hydrated crystalline $\text{Li}_4\text{Fe}(\text{CN})_6 \cdot x\text{H}_2\text{O}$ from single crystal XRD data, after preparing single crystal of the material. But we are not able to solve the problem yet which is under process. It is obvious that the XRD pattern of hydrated and anhydrous material should not be same as observed from the XRD pattern of $\text{K}_4\text{Fe}(\text{CN})_6$ and $\text{K}_4\text{Fe}(\text{CN})_6 \cdot 3\text{H}_2\text{O}$. The formation of two plateaus can be explained in terms of phase transition of the cyano complex. During charge process, removal of fifty percent (50%) of the first lithium from $\text{Li}_4\text{Fe}(\text{CN})_6$ material, means fifty percent Fe^{2+} is oxidized to Fe^{3+}, cause a phase transition and thus the delithiation of the remaining fifty percent of the first lithium has taken place at higher potential. This is no doubt an interesting observation, which needs further study.