This semester, in the Nanoscience Lab, I was required to prepare alpha-Fe2O3(Hematite) by sol-gel method for my first experiment. This was a great experience as I learned a lot of new stuff and got to use cool instruments during the labs. Using my knowledge, and whatever I learnt, I have tried to create a detailed lab manual for the experiment for future students.

Alpha-Fe2O3 (Cell)

Objective:

To prepare alpha-Fe2O3 nanoparticles by sol-gel technique and study the effect of different annealing temperatures and heating times on the crystallite size using the peak widths of the diffractograms(XRD) of the differently prepared
samples.

Version 2

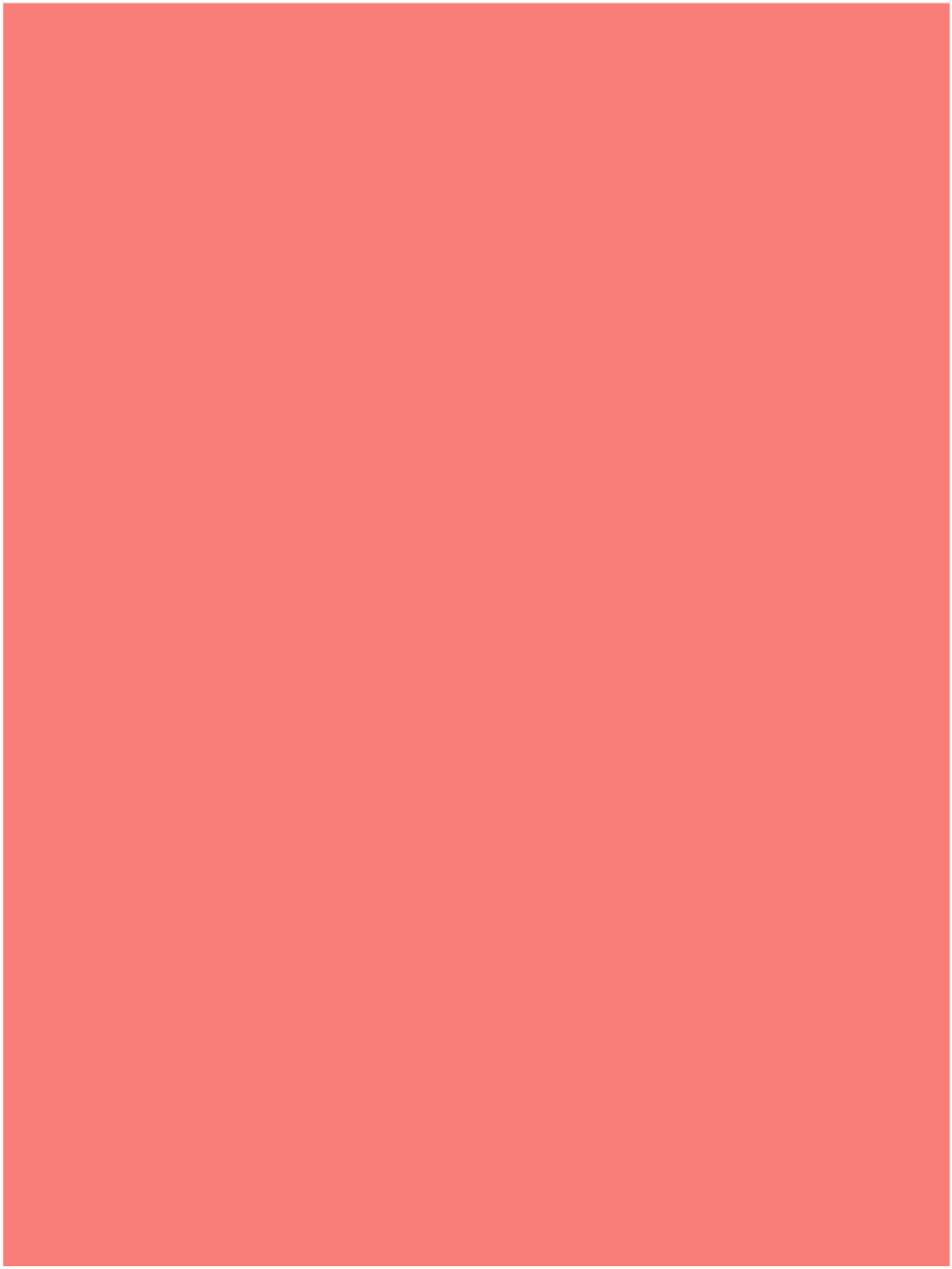
Here I am attaching a PDF version of the Lab Manual that I created. This is the version 2.0.
It contains observations about all the 4 samples. However, there are still some things that I need to add like the interplanar spacings and lattice parameter calculations and some info in the Results and Discussion section.
Download: PDFfe2o3 xrd compressed ver 2

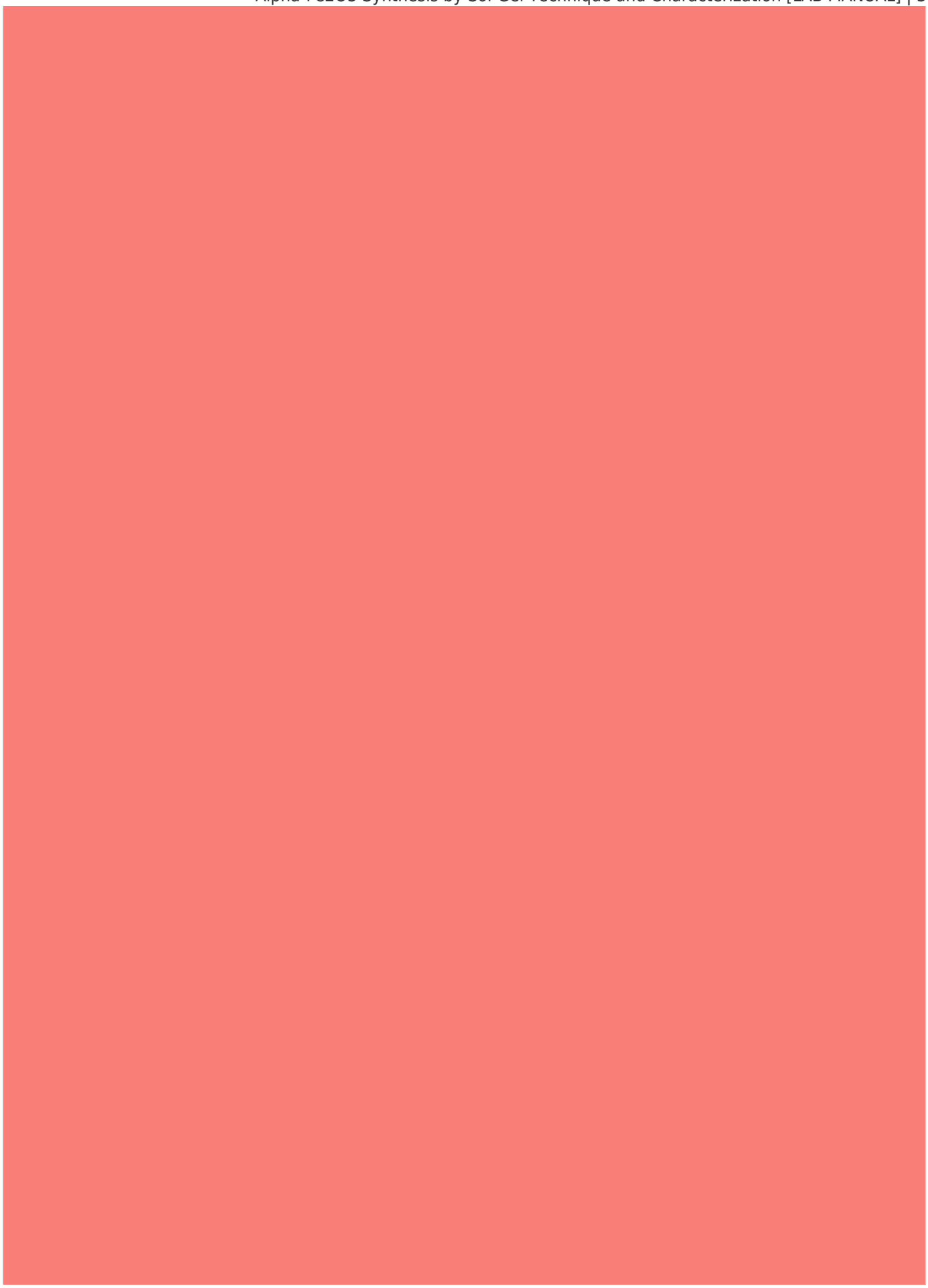
Version 1

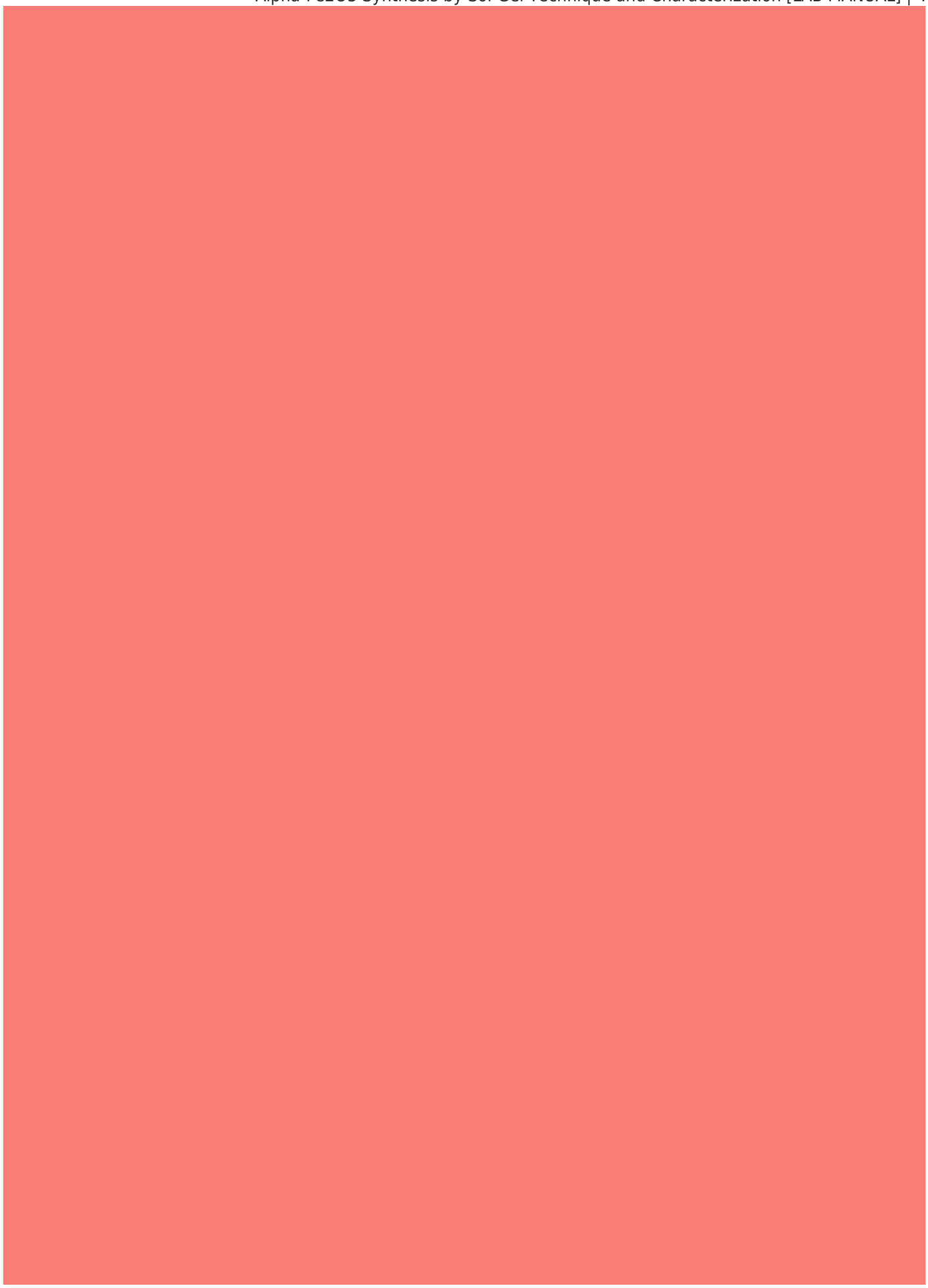
Currently, the manual contains info about 2 samples, but it will be updated soon.
Here I am attaching a PDF version of the Lab Manual that I created. This is the version 1.0.
It contains information about 2 samples.
fe2o3 xrd

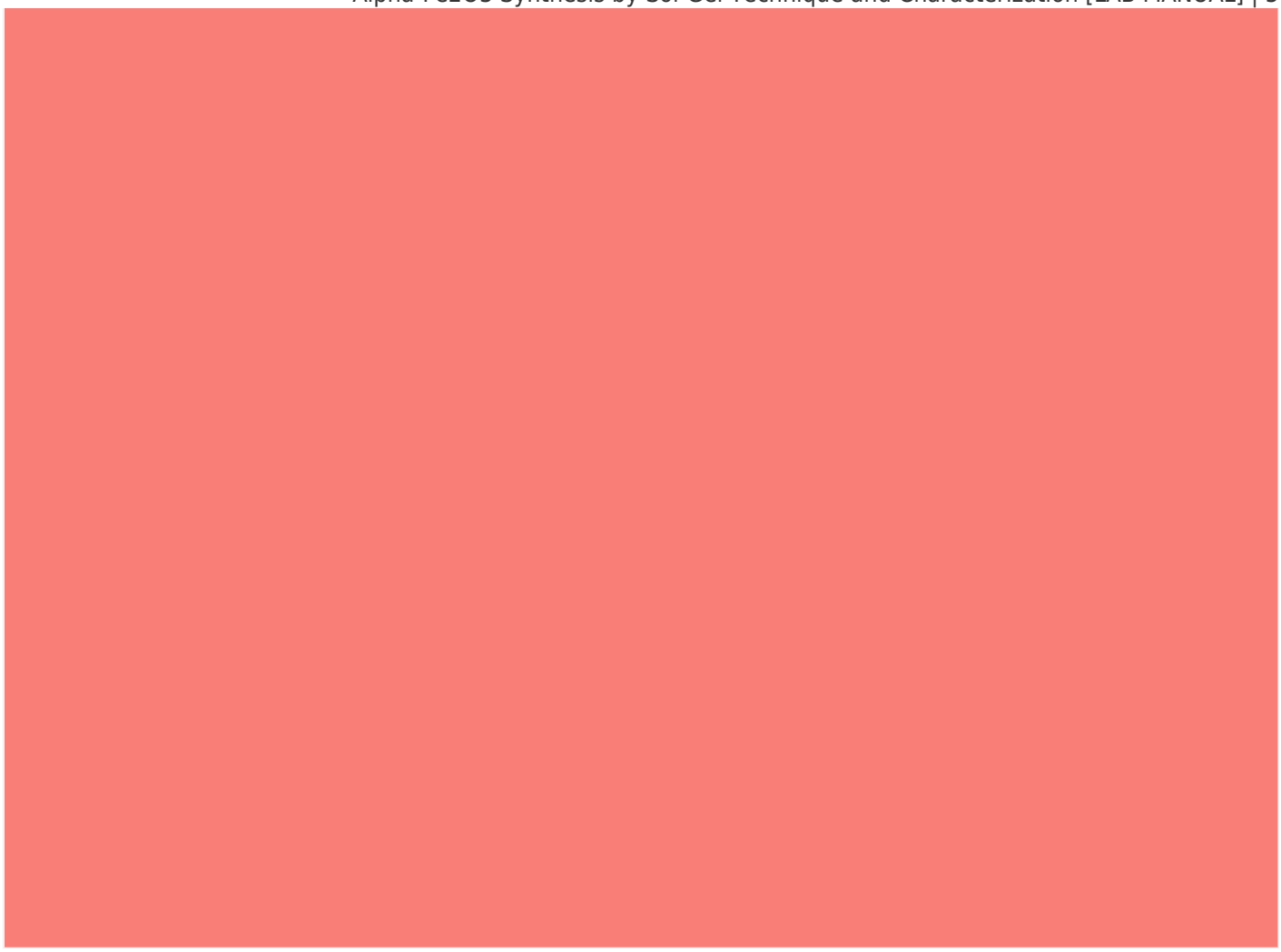
Manas Sharma

I'm a physicist specializing in computational material science with a PhD in Physics from Friedrich-Schiller University Jena, Germany. I write efficient codes for simulating light-matter interactions at atomic scales. I like to develop Physics, DFT, and Machine Learning related apps and software from time to time. Can code in most of the popular languages. I like to share my knowledge in Physics and applications using this Blog and a YouTube channel.









Share this:

Click to share on Facebook (Opens in new window)

Click to share on Twitter (Opens in new window)

Click to share on WhatsApp (Opens in new window)

Click to share on Pinterest (Opens in new window)

Click to share on Reddit (Opens in new window)

Click to share on LinkedIn (Opens in new window)

Click to email a link to a friend (Opens in new window)

Click to print (Opens in new window)

Click to share on Tumblr (Opens in new window)

Click to share on Pocket (Opens in new window)

Click to share on Telegram (Opens in new window)

[wpedon id="7041" align="center"]