

Growth & Characterization of Tb:CePO₄ nanoparticles with varying Tb concentrations

CePO₄ nanostructures (nanowires, nanoparticles etc.), when doped with suitable elements, are suitable for luminescence applications. Tb as the dopant can act as an activator in CePO₄ host material exhibiting high intensity emission in a broad wavelength band ranging from ultra-violet to visible to depending upon synthesis parameters.

- For this purpose, pure and Tb:CePO₄ nanowires were synthesized. Basic characterization of this material has already been performed and further supporting experiments including EXAFS and TEM are being performed.
- These experiments would help in gaining the understanding of influence of structural properties on luminescence properties of Tb:CePO₄ nanowires. This would be an important addition to the existing knowledge of luminescent materials and would be the first report of this kind.

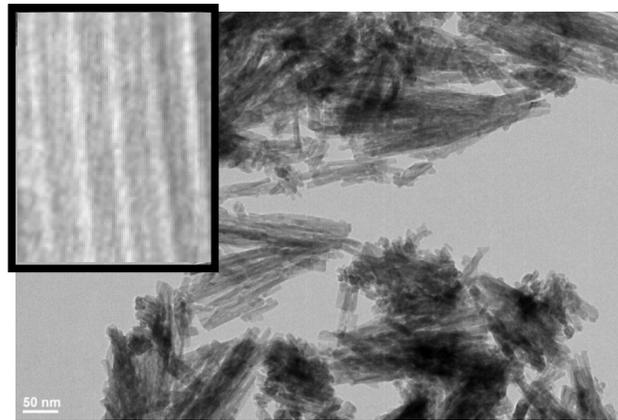


Image: TEM image of Tb:CePO₄ nanowires grown by chemical synthesis route. Inset shows the enlarged HRTEM image exhibiting lattice planes visible in these nanowires.