

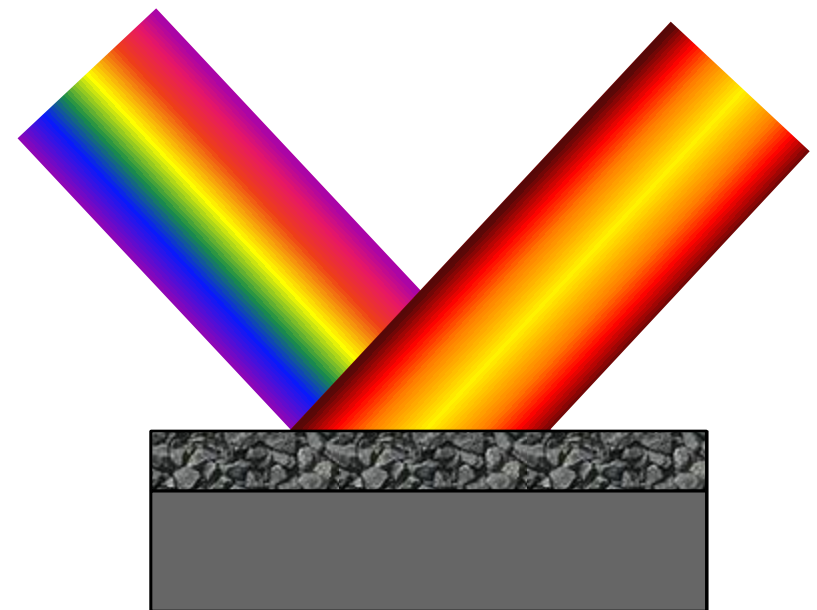
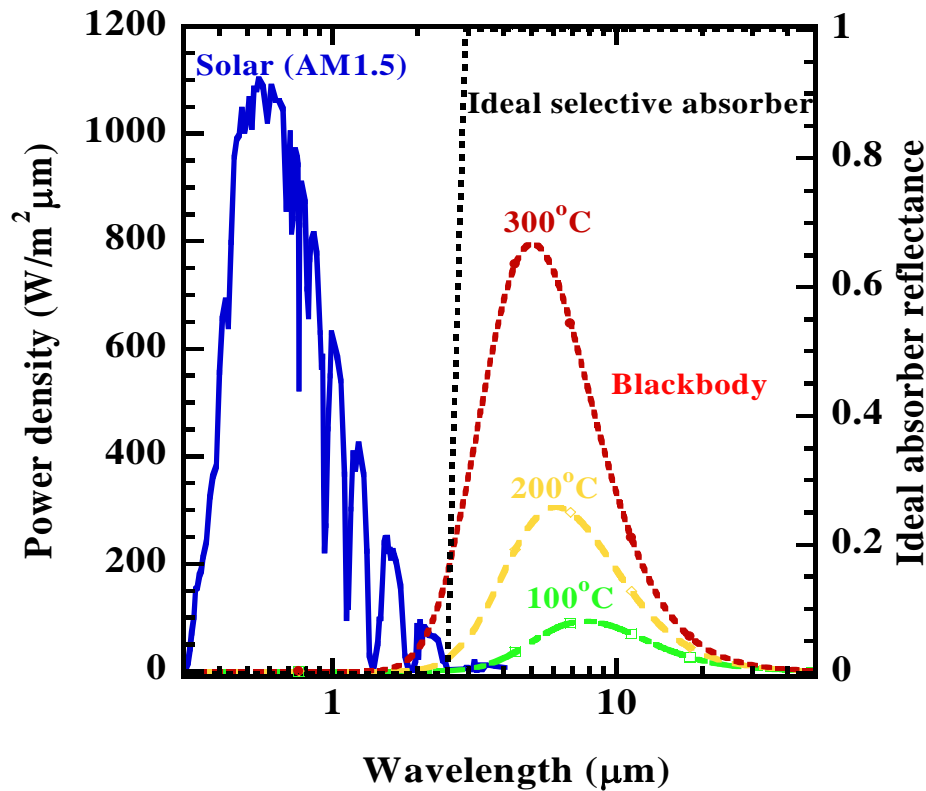
Sol-gel fabrication and optical absorption properties of C-NiO nanocomposite coatings

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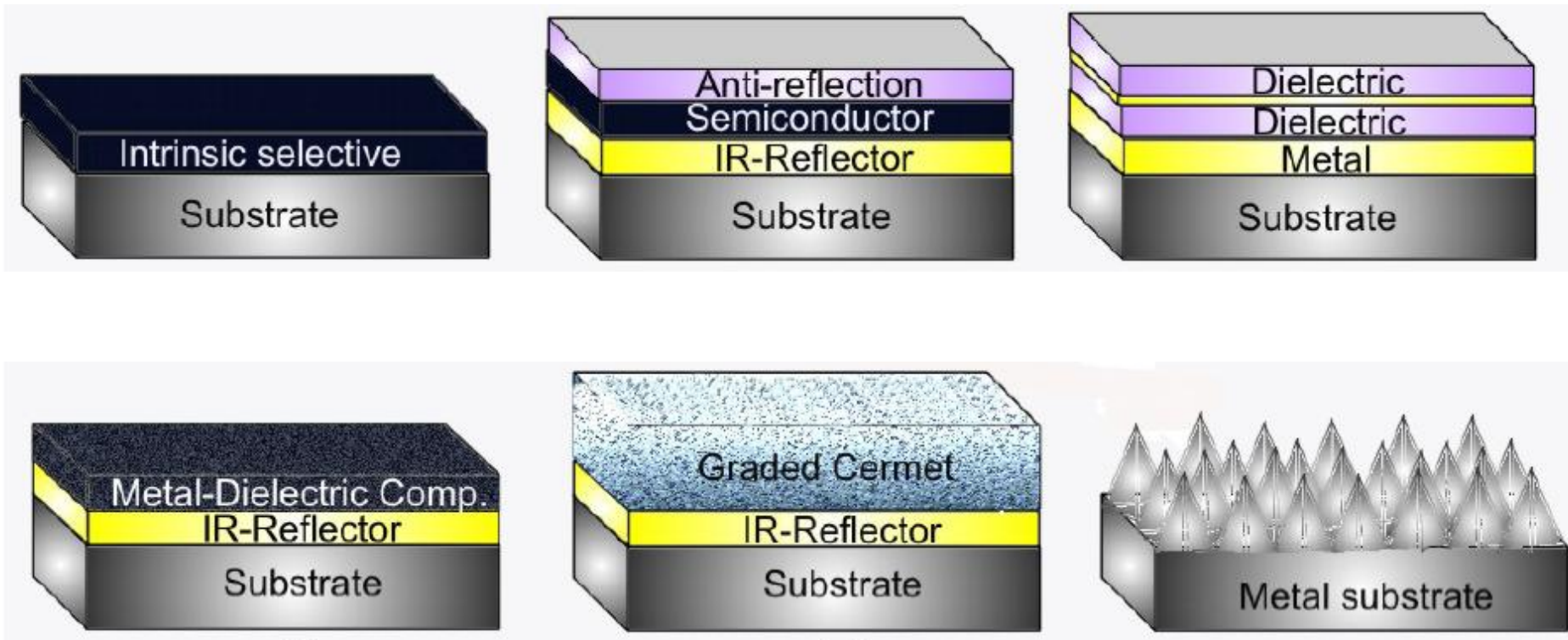
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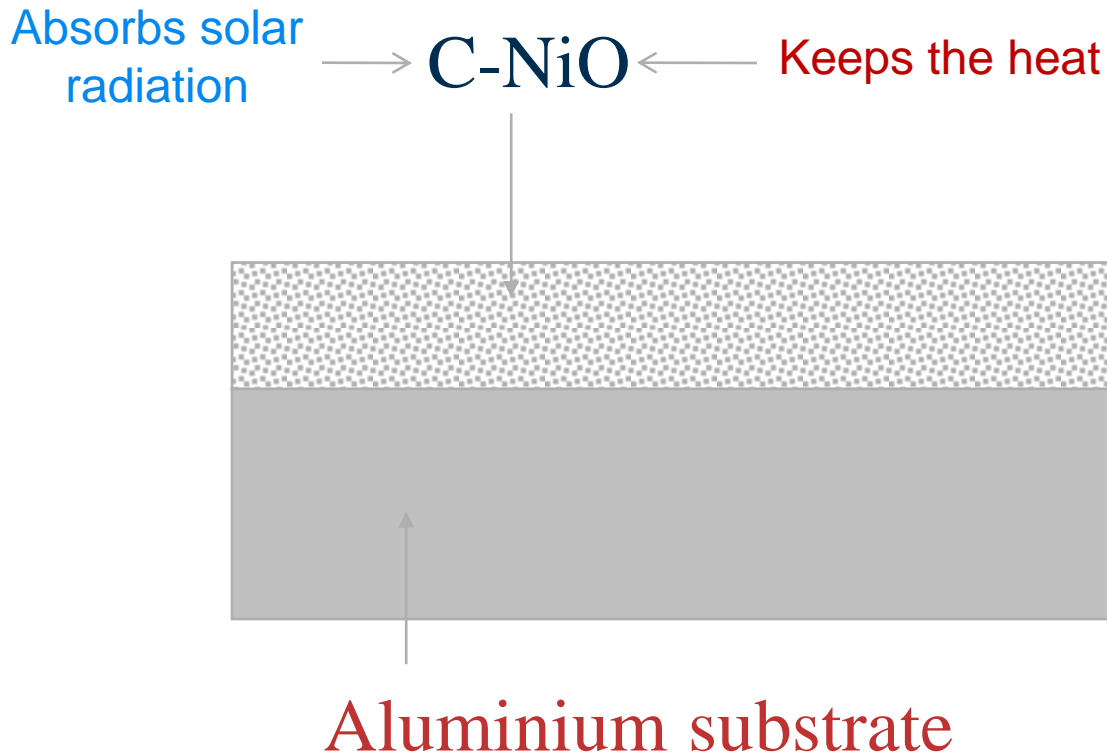
The ideal is to absorb as much of the sunlight as possible, then prevent thermal emittance



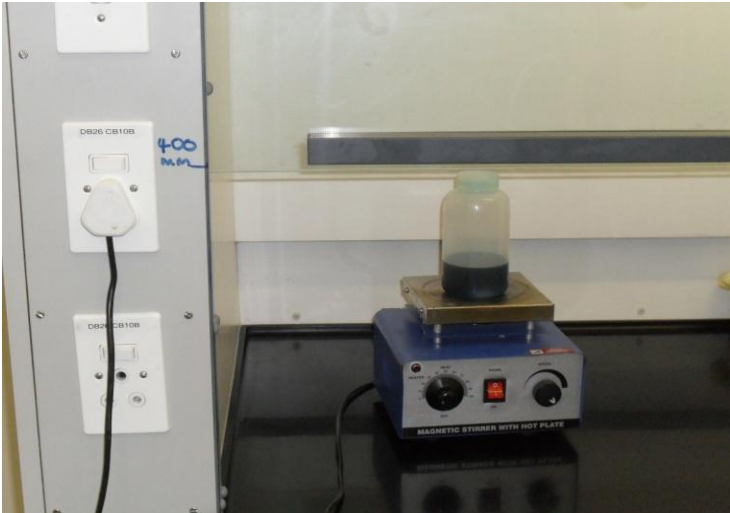
The manufacturing process for most commercial thermal products is complicated



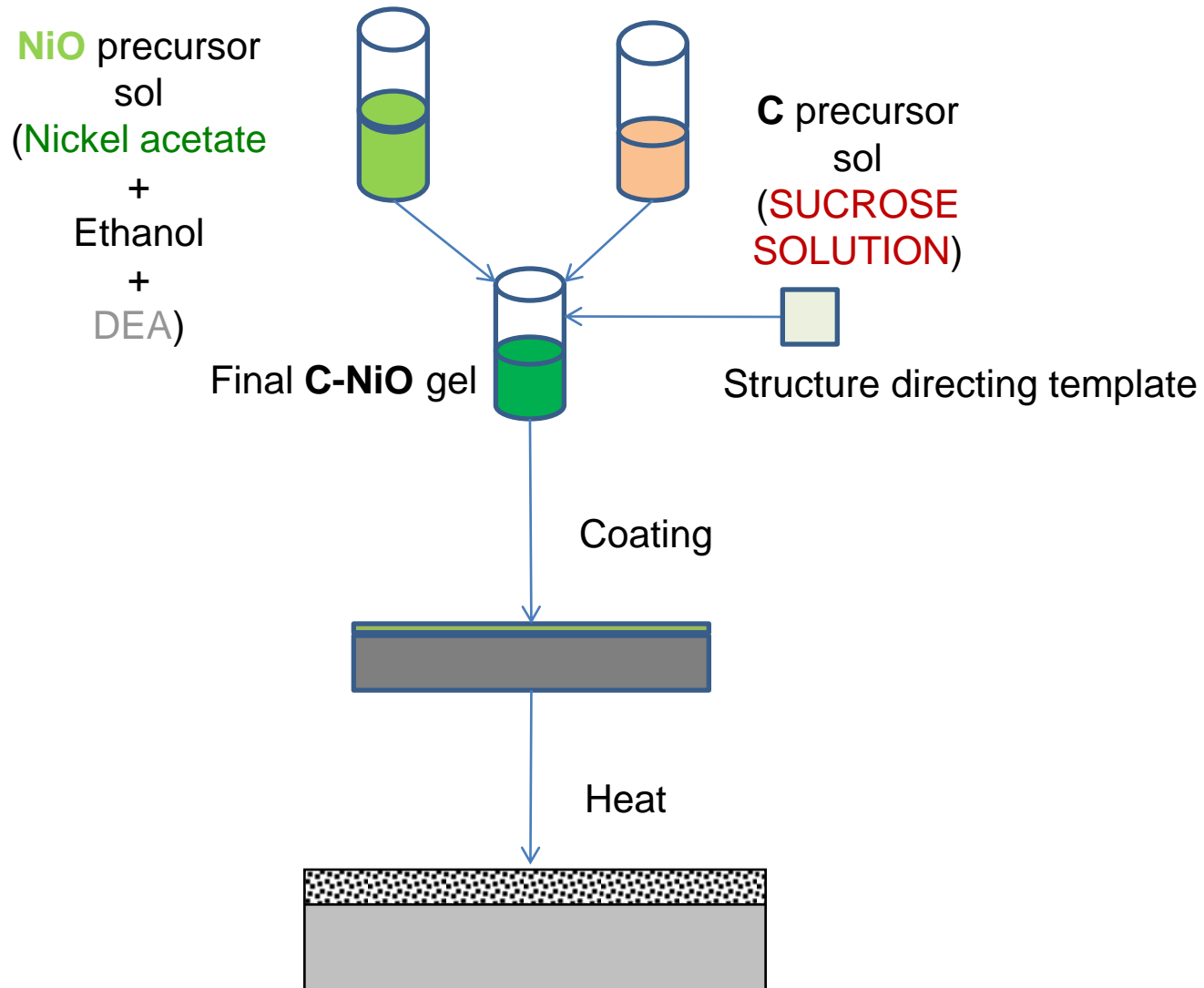
C-NiO/Al has been fabricated using a simple and cheap sol-gel procedure combined with spin coating technique



The samples are fabricated in a simple wet chemistry lab following a simple 3 step procedure



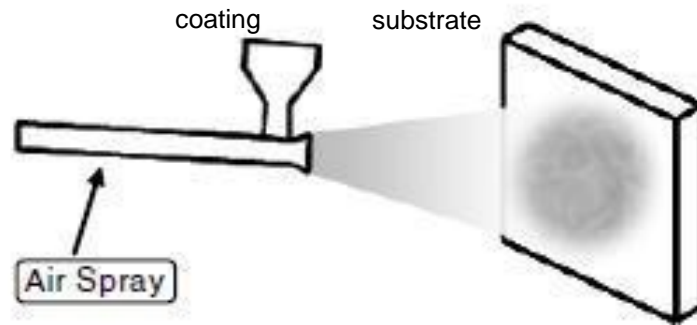
By suitable choice of precursor, we can engineer novel composite materials



Sol-gel technique can be adapted to different coating methods

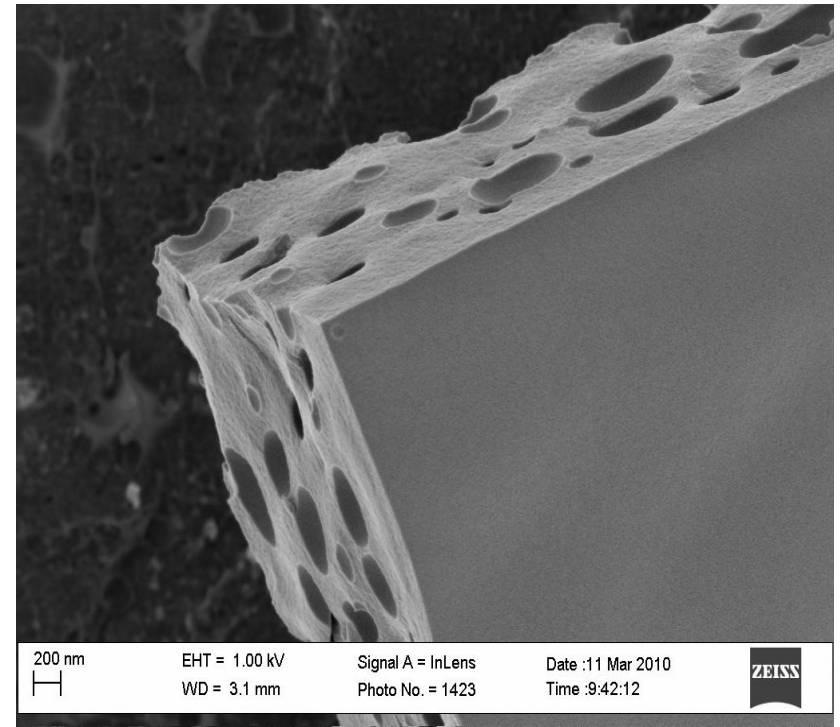
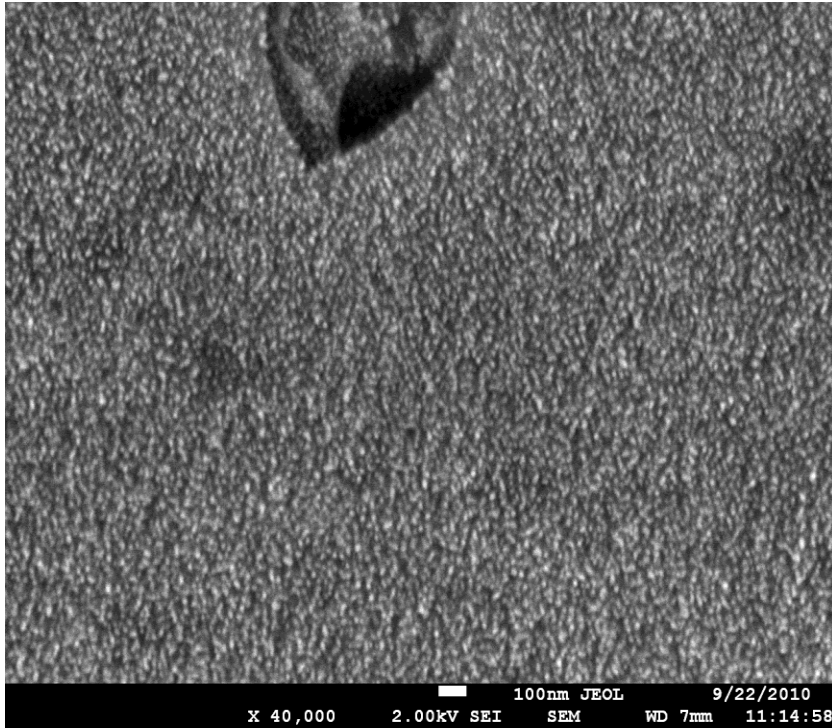


Spin coating

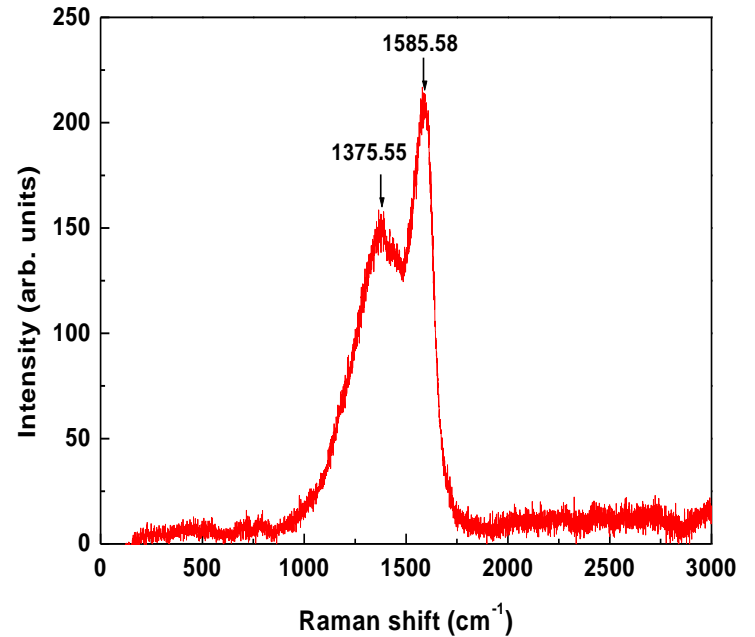
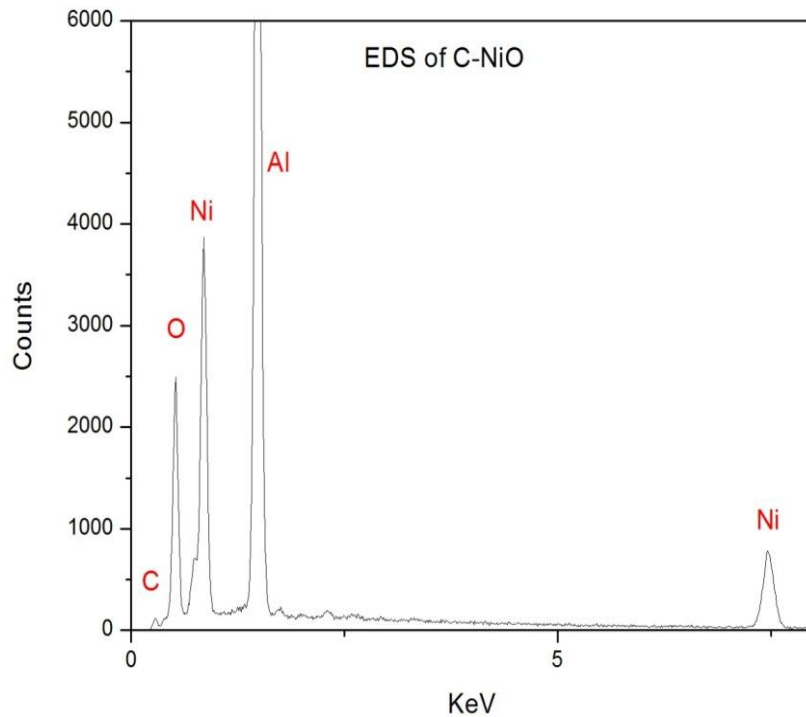


Spray coating

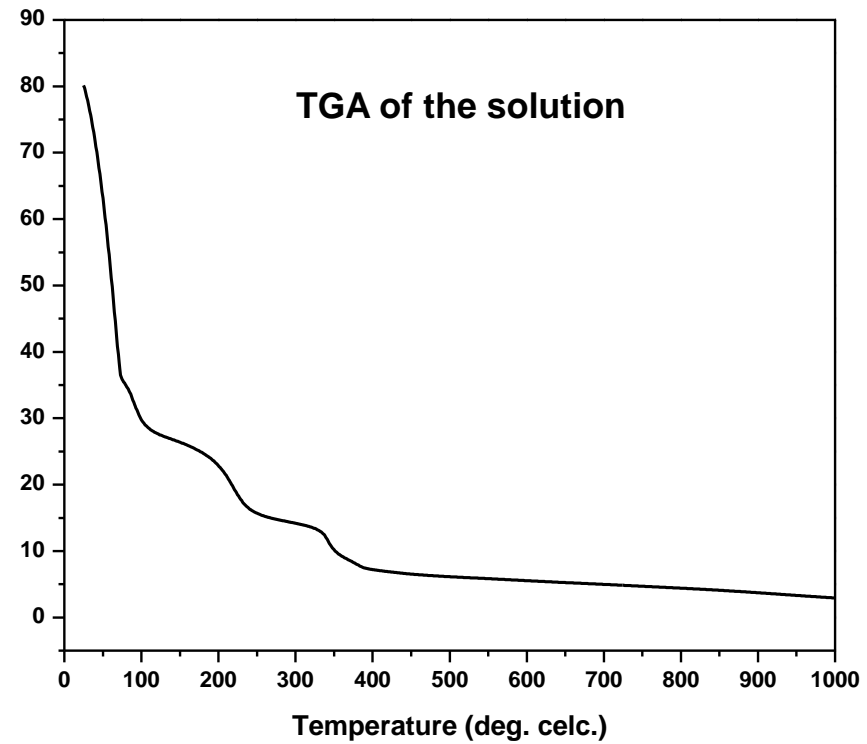
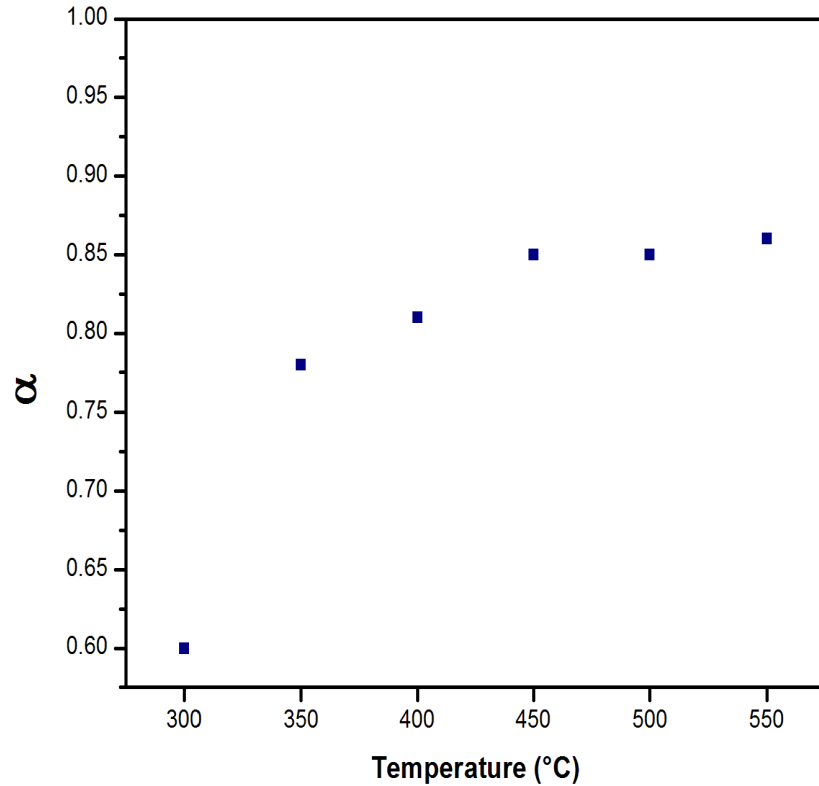
The material is compact and porous



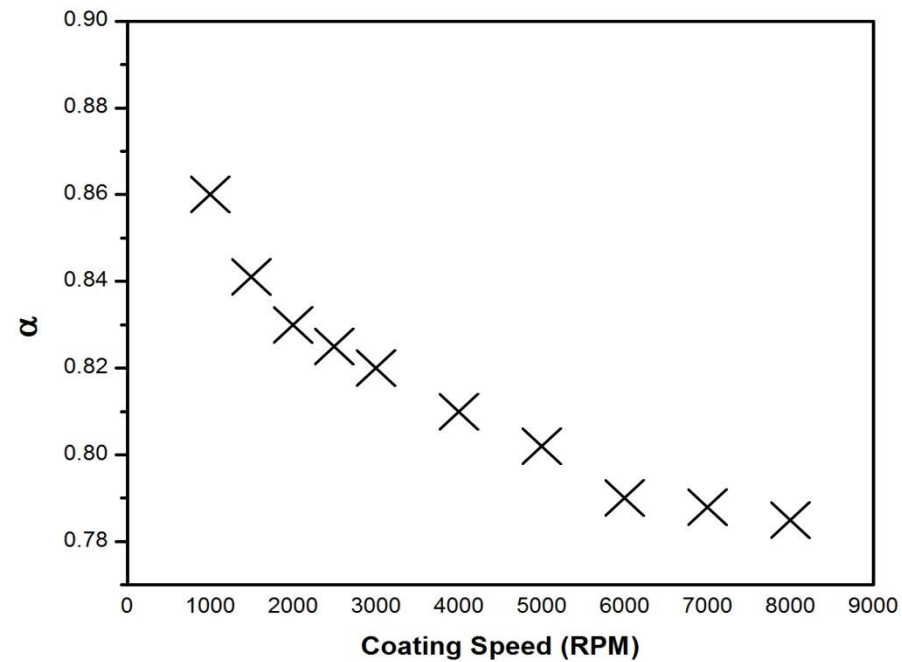
EDS confirms NiO while Raman reveals a presence of predominantly graphite Carbon



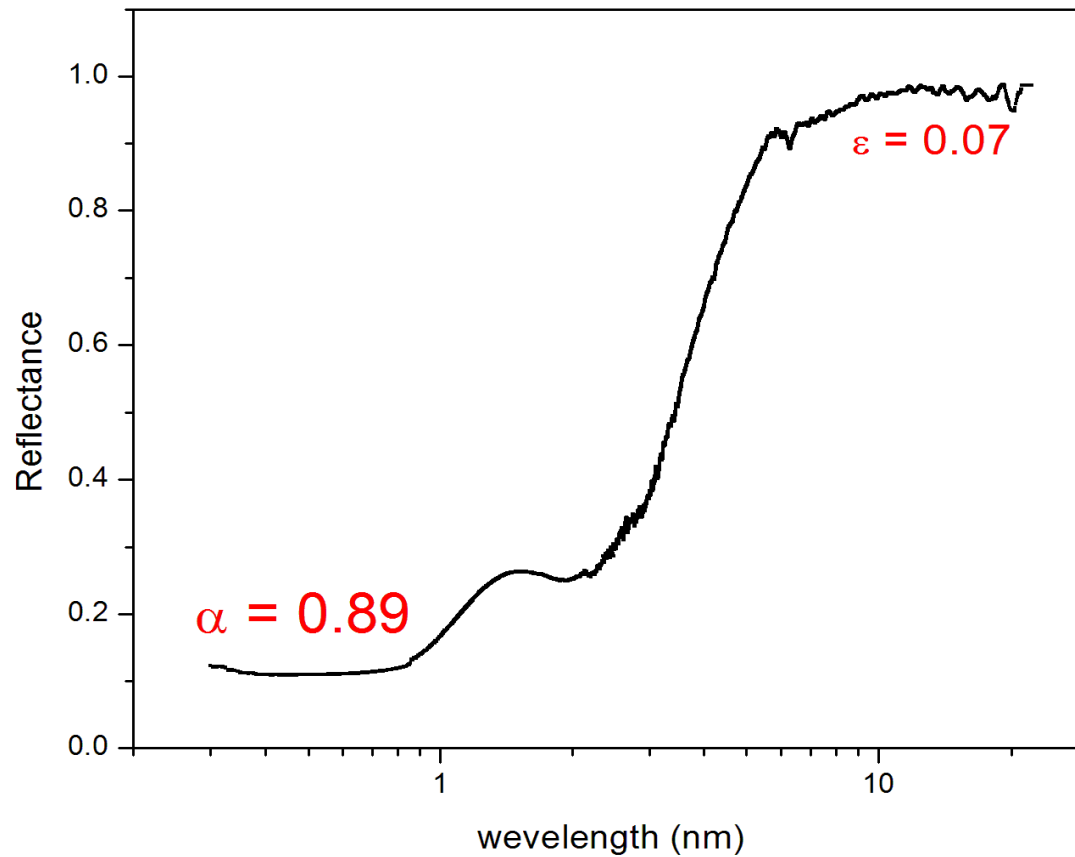
The absorption increases with temperature



The absorptance decreased with an increase in coating thickness



A typical near normal reflectance curve in the UV/Vis-Infrared shows that C-NiO coatings are selective



Thank You

