

## Electronic Supplementary Information (ESI)

### **Ruthenium Inserted Hydrotalcite (Ru-HT) Heterogeneous Catalyst for the Kinetic Studies of Selective Hydrogenation of Carbon Dioxide to Formic Acid**

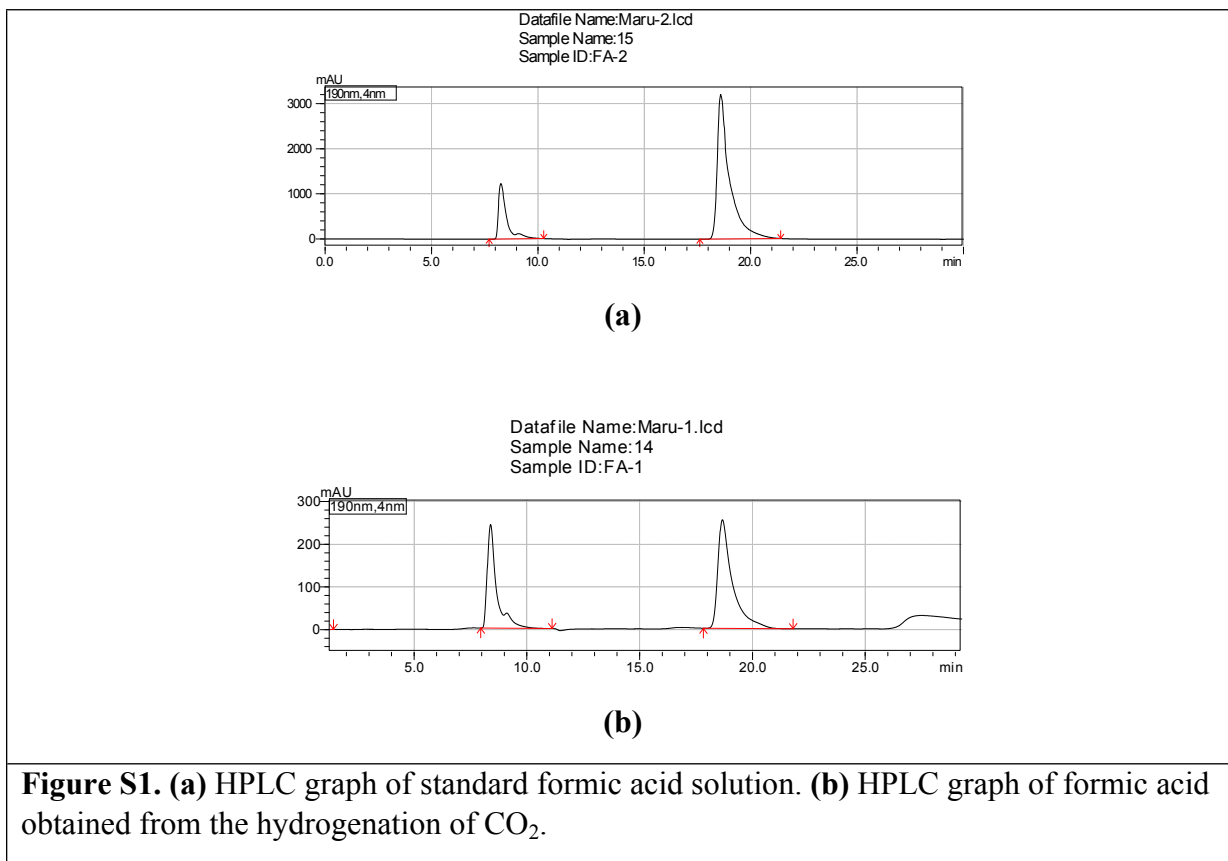
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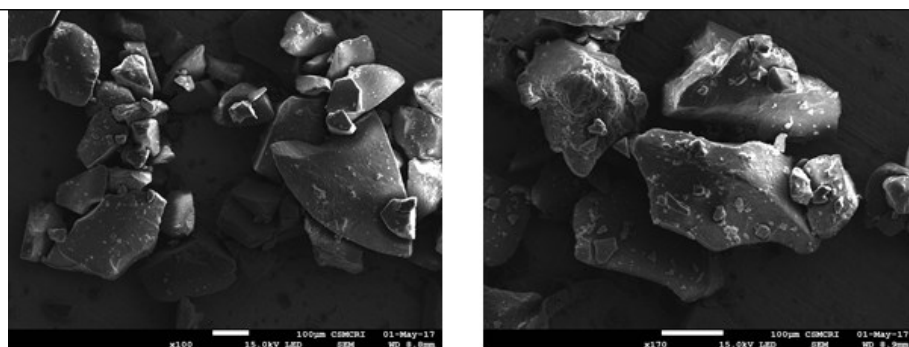
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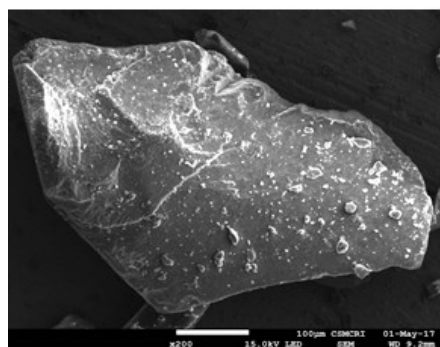
<sup>d</sup>Department of Chemistry, Indian Institute of Teachers Education (IITE), Gandhinagar, 382016, Gujarat, India



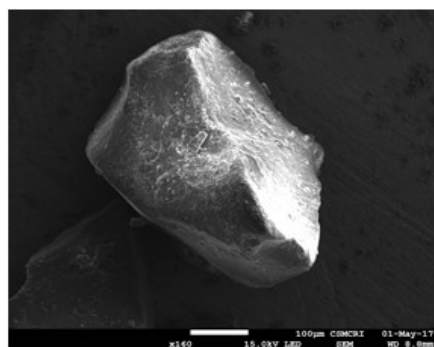


(a)

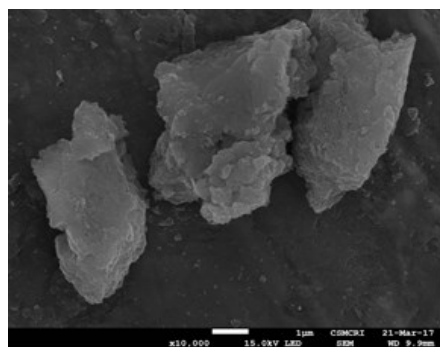
(b)



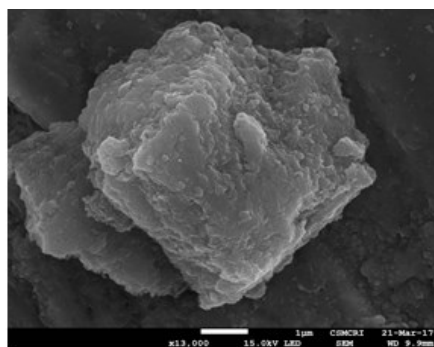
(c)



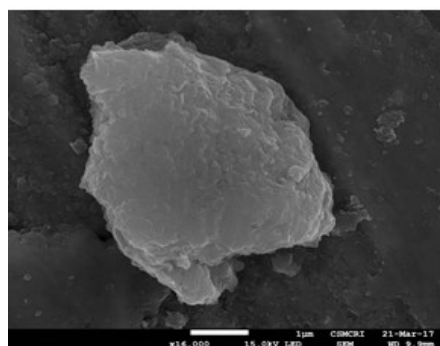
(d)



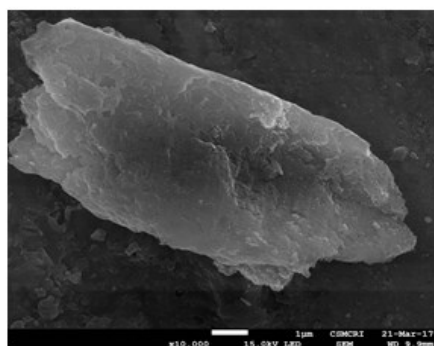
(e)



(f)

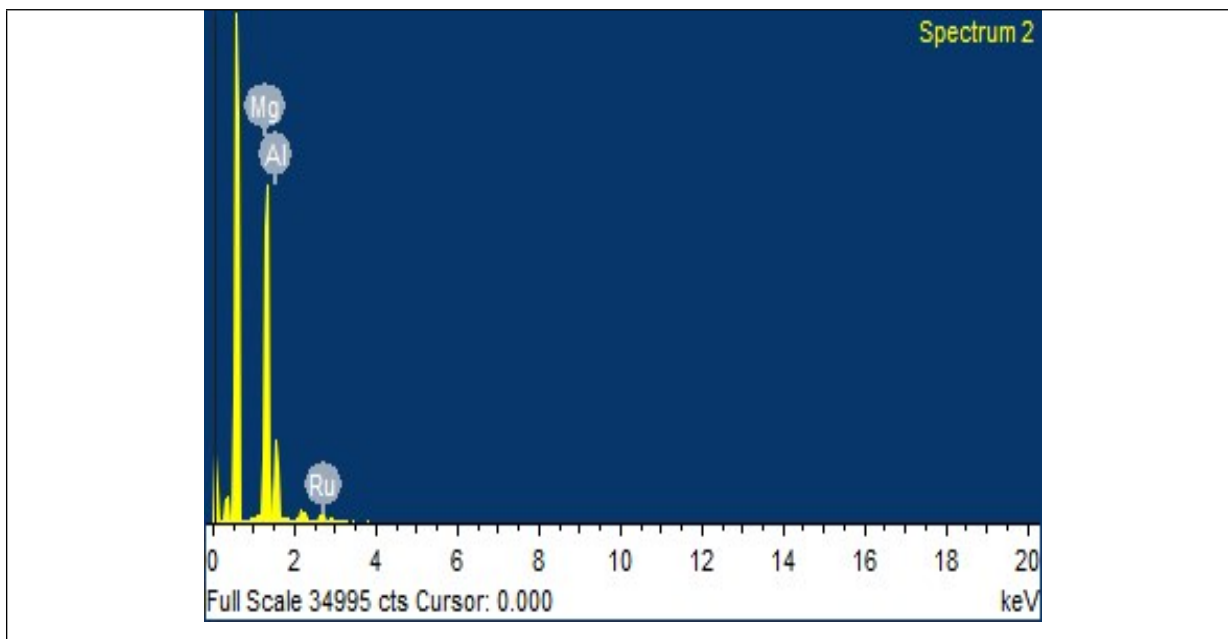


(g)

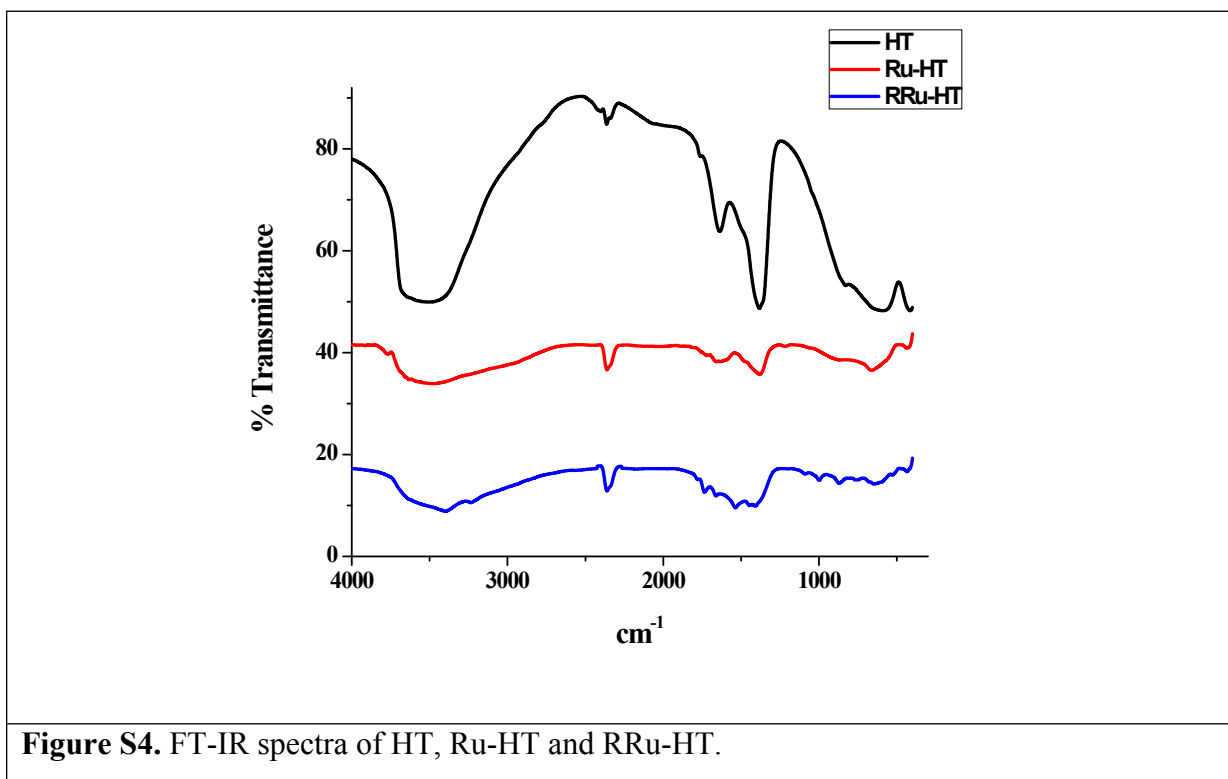


(h)

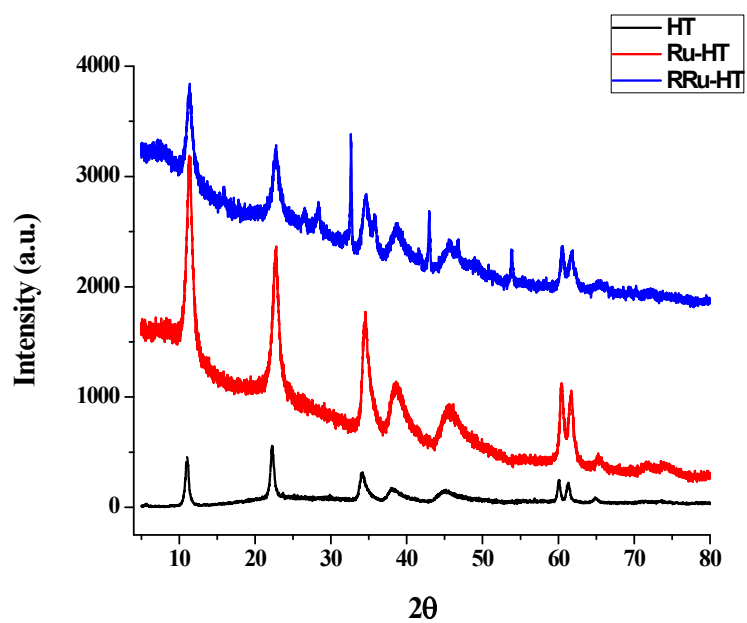
**Figure S2.** Field Emission Scanning Electron Microscope (FE-SEM) images of Ru-HT (a-d) and R Ru-HT (e-h).



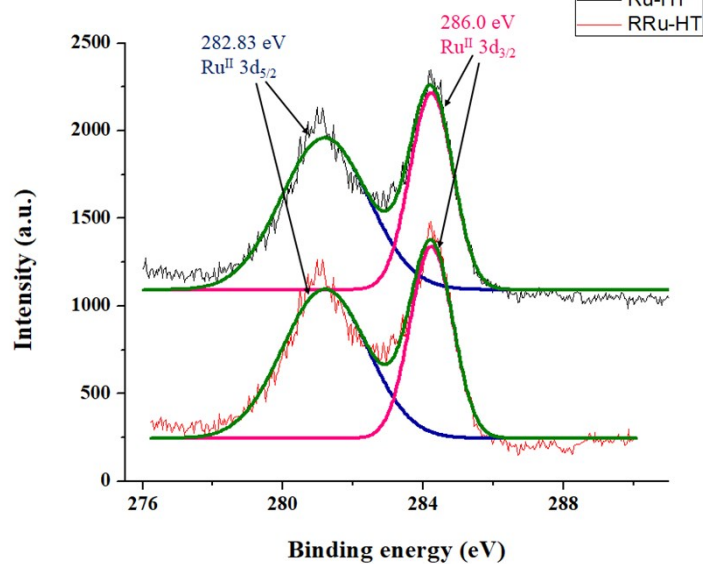
**Figure S3.** Scanning Electron Microscope-EDX graph of Ru-HT showing the presence of Ru<sup>II</sup> ion.



**Figure S4.** FT-IR spectra of HT, Ru-HT and RRu-HT.



**Figure S5.** XRD spectra of HT, Ru-HT and RRu-HT (Recycled Ru-HT).



**Figure S6.** The X-ray photoelectron spectroscopy (XPS) of Ru<sup>II</sup> 3d species observed in Ru-HT and RRu-HT.