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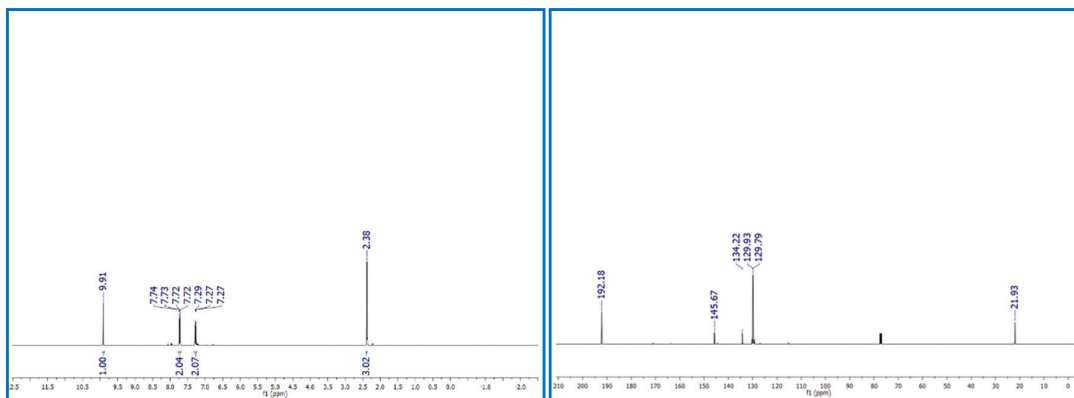
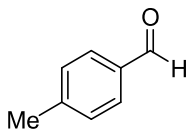
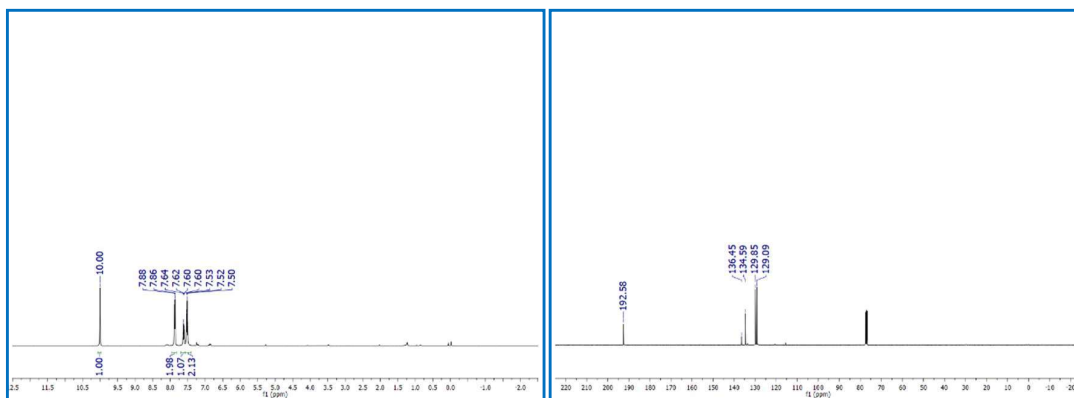
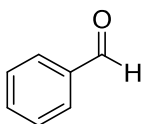
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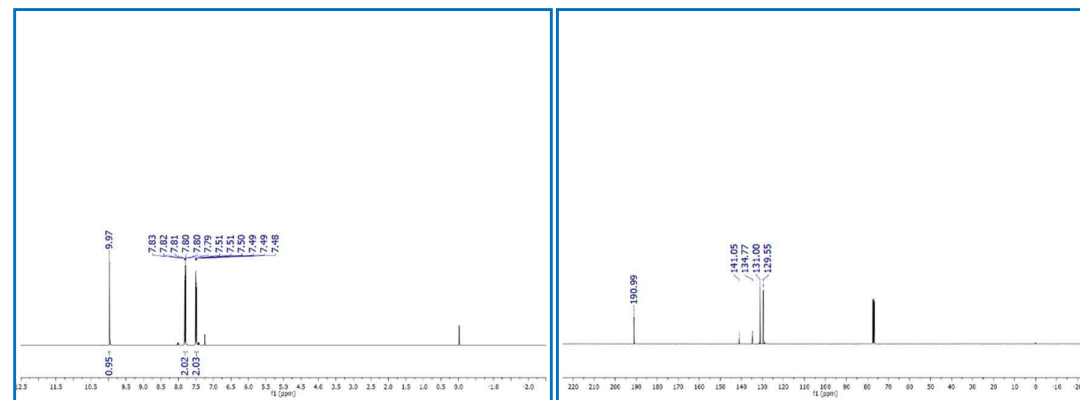
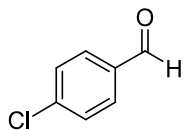
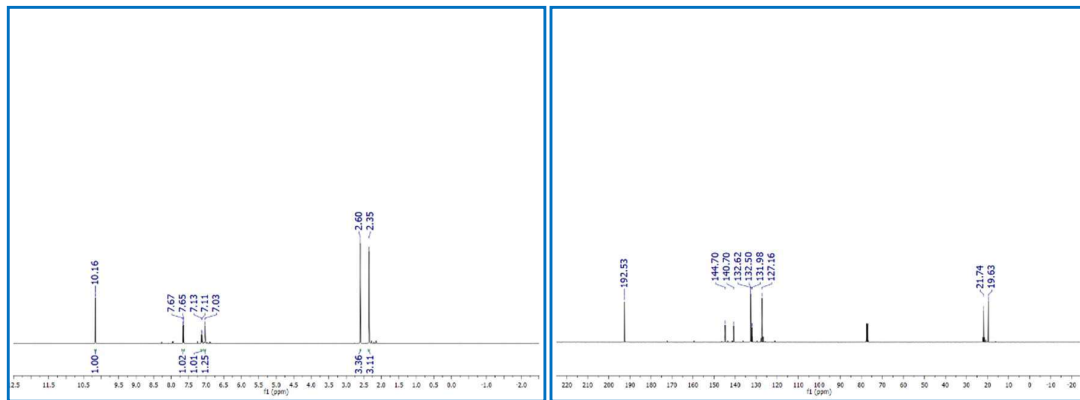
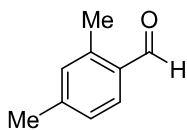
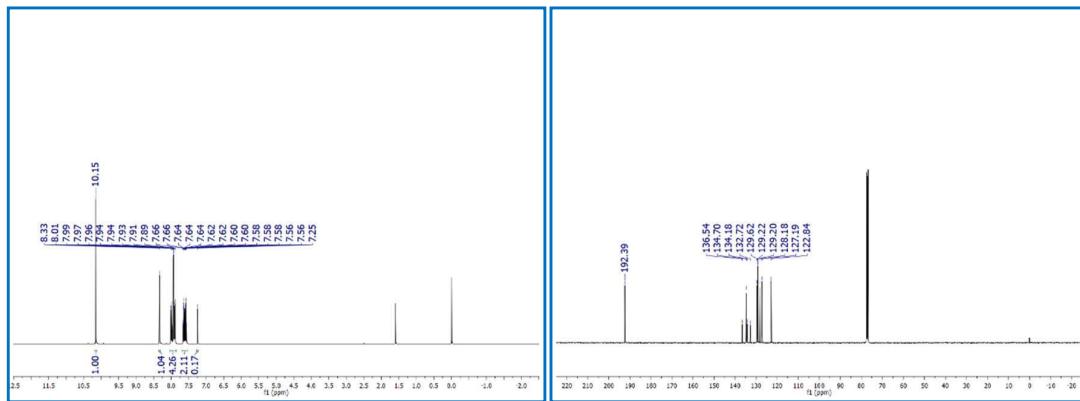
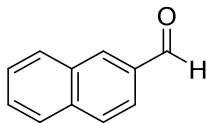
ANNEXURE

Experimental Details: The ^1H (left hand side), ^{13}C $\{^1\text{H}\}$ (right hand side) NMR spectra were recorded using JEOL ECS-400 spectrometer (operating at 400 MHz for ^1H and 100 MHz for ^{13}C).

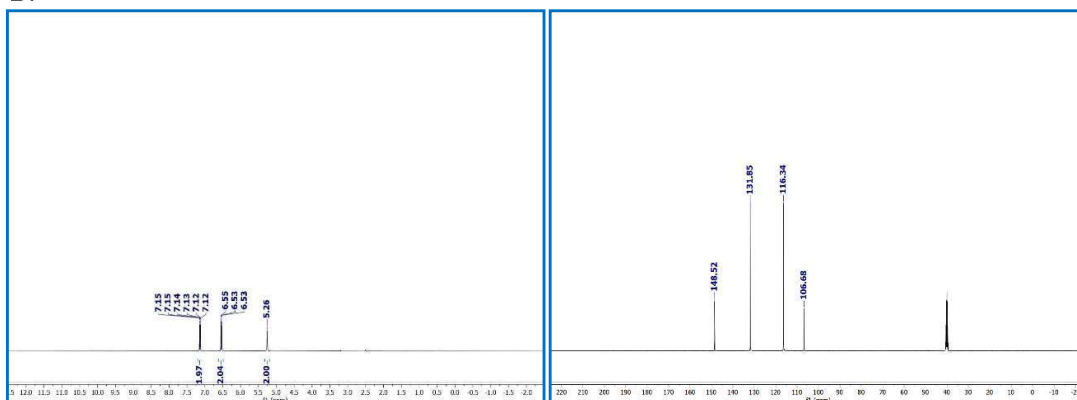
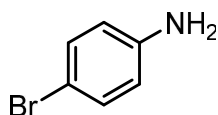
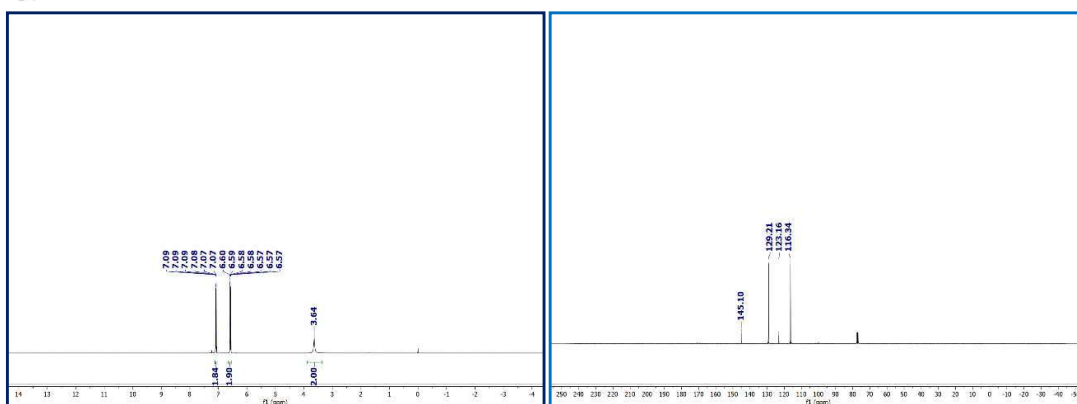
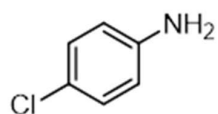
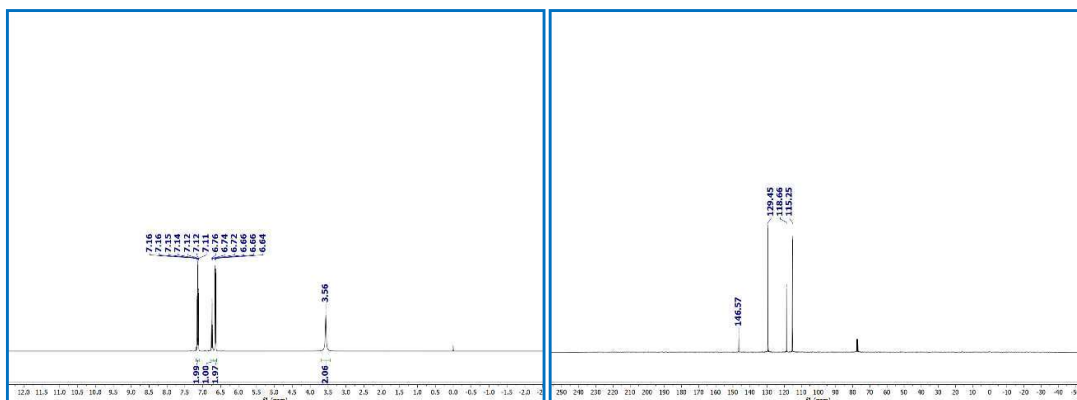
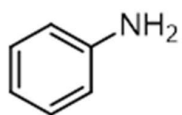
Chemicals and reagents: Reactants, reagents, chemicals, and solvents available commercially within the country were used.

Representative characterisation data Aldehydes





Representative characterisation data Amines



LIST OF PUBLICATIONS

Journals:

1. **Mukesh Suthar**, Avinash K. Srivastava, Raj K. Joshi, P. K. Roy, “*Nanocrystalline cerium-doped Y-type barium hexaferrite; a useful catalyst for selective oxidation of styrene*” **Journal of Materials Science: Materials in Electronics**, 31(2020) 16793–16805.
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3. Chiranjib Chakrabarti, Qingshan Fu, Biplab Kumar Paul, Xinghan Chen, Jia Zheng, Hongxia Yin, Wajahat Ali, Yang Qiu, **P. K. Roy**, **Mukesh Suthar**, Songliu Yuan, “*Ferromagnetic, dielectric, and ferroelectric characteristic near the morphotropic phase boundary in $(1-x)(0.7\text{BiFeO}_3-0.3\text{BiNa}_{0.5}\text{TiO}_3)-x(\text{CaTiO}_3)$ solid solution*” **Ceramic International**, 47(14) (2021) 20268-20275.
4. **Mukesh Suthar**, Deepak Khare, Asnit Gangwar, Samya Banerjee, N. K. Prasad, A. K. Dubey, P. K. Roy, “*Structural, magnetic, and biocompatibility evaluations of chromium substituted barium hexaferrite ($\text{Co}_2\text{-Y}$) for hyperthermia application*”, **Materials Chemistry and Physics**, (Communicated).
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Patent Applications:

1. "Method of manufacturing combined type humidity sensor based on tungsten doped Y-type barium hexaferrite; (Indian Patent No: 403005, Date: 04-08-2022), Inventor: **M. Suthar, P. K. Roy.**
2. "A method of preparing benzaldehyde through catalytic oxidation", (Indian Patent Application No: 202011005531, Date: 07-02-2020), Inventor: **M. Suthar, P. K. Roy.**

International Conference:

1. **Mukesh Suthar, P. K. Roy,** " *Selective Oxidation of Styrene to Benzaldehyde Using Aluminium Doped Nano Barium Hexaferrite, synthesized by Sol-gel Auto-combustion Method*" International Conference on "Nanotechnology for Better Living" (NBL-2019) 7-11th April 2019 at National Institute of Technology, Srinagar, INDIA.
2. **Mukesh Suthar, P. K. Roy,** " *Effect of Cerium (Ce^{+3}) substitution on Structural, Magnetic and Dielectric Properties of Barium Hexaferrite*" 5th Conference of the Serbian Society for Ceramic Materials (5CSCS-2019) 11–13th June 2019 at the Faculty of Mechanical Engineering, University of Belgrade, Belgrade, SERBIA.
3. **Mukesh Suthar, P. K. Roy,** "*Heterogeneously catalyzed efficient hydration of alkynes to ketones using barium hexaferrite, synthesized by sol-gel auto-combustion method*" Third international conference on material science (ICMS2020) during 4-6th March, 2020 at Department of Physics, Tripura University, INDIA
4. **Mukesh Suthar, P. K. Roy,** "*Structural and magnetic properties of aluminium doped Y-type barium hexaferrites*" Symposium of Magnetism and Spintronics (SMS-2021) during 25th – 27th November 2021 at National Institute of Science Education and Research (NISER), Bhubaneswar, INDIA.
5. **Mukesh Suthar, P. K. Roy,** "*Facile synthesis and microwave absorption performance of paraffin wax/BCZT/activated carbon-based composite within Ku band*" International virtual conference on advances in ceramic & cement technologies: materials & manufacturing during 13th -14th of December 2021 at PDA College of Engineering in Kalaburagi, Karnataka, INDIA.