22CH101 CHEMISTRY LABORATORY

R-2022 (Common to I Semester CSE, CSE (CS), ADS & II Semester ECE)

COURSE OUTCOMES:

On successful completion of this course, the students will be able to

CO1: Interpret the water quality parameters and explain the various water treatment methods.

CO2: Construct the electrochemical cells and sensors.

CO3: Compare different energy storage devices and predict their relevance in electric vehicles.

CO4: Classify different types of smart materials, their properties and applications in Engineering and Technology.

CO5: Integrate the concepts of nanochemistry and enumerate its applications in various fields.

List of Experiments:-

1. Determination of total, temporary and permanent hardness of water by EDTA method.
2. Determination of chloride content of water sample by argentometric method.
3. Determination of alkalinity in water sample.
4. Determination of the amount of NaOH using a conductivity meter.
5. Determination of the amount of acids in a mixture using a conductivity meter.
6. Determination of the amount of given hydrochloric acid using a pH meter.
7. Determination of single electrode potential of the given electrode.
8. Estimation of the iron content of the given solution using a potentiometer.
9. Determination of electrochemical cell potential (using different electrodes/ different concentrations of electrolytes)
10. Determination of the molecular weight of polymer using Ostwald viscometer.
11. Application of polymeric fibers in 3D printing.
12. Determination of concentration of $BaSO_4$ nanoparticles by conductometric titrations.
13. Preparation of ZnO nanocrystal by precipitation method.

REFERENCES:

1. J. Mendham, R. C. Denney, J. D. Barnes, M. J. K. Thomas and B. Sivasankar, "Vogel's Quantitative Chemical Analysis", 6th edition, Pearson Education Pvt. Ltd.,2019.