

1.	Title of the course	Supramolecular Architectures and Molecular Machines: Fundamentals and Applications
2.	Course number	CY514L
3.	Structure of credits	2-1-0-3
4.	Offered to	PG
5.	New course/modification to	Modification To CY5027/18
6.	To be offered by	Department of Chemistry
7.	To take effect from	January 2022
8.	Prerequisite	CoT
9.	Course Objective(s): To introduce the concepts and the process of supramolecular chemistry, engineering and technology. To demonstrate its utility in engineering/constructing molecular based sensors, switches, devices and machines leading to molecular technology. Raise confidence levels in the student to engineer/design a supramolecular system of his/her choice.	
10.	Course Content: Introduction to supramolecular science and technology; Supramolecular systems and or assemblies; Weak intermolecular forces: cation and anion based interactions, concepts of HSAB, coordination chemistry; Ion, species and or molecular recognition: natural and synthetic systems forming supramolecular structured materials; Property driven functions of supramolecular assembly; Metal coordinated special assemblies: molecular knots, catenanes, cages, capsules, tubes, necklaces; Engineering supramolecular systems: sensors, switches, devices & machines; Connectivity & Comparison: molecule to machine.	
11.	Textbook(s): 1. Schneider H J, <i>Applications of Supramolecular Chemistry</i> , 1st Edition, CRC Press (2012). 2. Steed J W and Atwood J L, <i>Supramolecular Chemistry</i> , 2nd Edition, Wiley (2009).	
12.	Reference(s): 1. Ariga K and Kunitake T, <i>Supramolecular Chemistry: Fundamentals and Applications</i> , 1st Edition, Springer (2008). 2. Atwood J L (Editor-In-Cheif), <i>Comprehensive Supramolecular Chemistry II</i> , 2nd Edition, Elsevier (2017). 3. Lehn J M, <i>Supramolecular Chemistry: Concepts and Perspectives</i> , 1st Edition, Wiley (1995).	