

Module code	SC-4311		
Module Title	Semiconductors as Photocatalysts		
Degree/Diploma	Bachelor of Science (Chemistry)		
Type of Module	Major Option		
Modular Credits	2	Total student workload	5 hours/week
		Contact hours	2 hours/week
Prerequisite	SC-1211 Fundamentals of Inorganic Chemistry		
Anti-requisite	None		
Aims			
To understand the chemistry of semiconductors such as metal oxides and chalcogenides in terms of photocatalysis involving synthesis and various applications related with energy and environment.			
Learning Outcomes:			
<i>On successful completion of this module, a student will be expected to be able to:</i>			
Lower order:	40%	understand the basic chemistry of semiconductors such as metal oxides and chalcogenides. understand the basics of catalysis. understand the basics of photocatalysis involving semiconductors and its nanocomposites. identify the different types of light active semiconductors and its nanocomposites.	
Middle order:	40%	synthesis of photocatalytic semiconductors and its nanocomposites. characterization of the synthesized photocatalytic semiconductors and its nanocomposites. interpretation of the results of the analyses.	
Higher order:	20%	apply the concepts of photocatalysis in real applications related with energy and environment. utilize the synthesized photocatalytic semiconductors and its nanocomposites for various applications such as air and water pollution control, water splitting etc.	
Module Contents			
<ul style="list-style-type: none"> - Chemistry of semiconductors, - Chemistry of metal oxides and chalcogenides as semiconductor, - Potentials of metal oxides and chalcogenides as catalysts, - Promises of metal oxides and chalcogenides as photocatalysts, - Different types (doped and undoped) of light (UV and Visible) active semiconductors, - Syntheses of photocatalytic semiconductors and its nanocomposites, - Characterization of the synthesized photocatalytic semiconductors, and - Applications of the synthesized photocatalytic semiconductors for various purposes. 			
Assessment	Formative assessment	Tutorial and feedback	
	Summative assessment	Examination: 60% Coursework: 40% - 2 class test: 20% - 2 oral presentation: 20%	