



# REACTIVE INTERMEDIATES CARBENE AND NITRENE

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IIT Kharagpur



**TYPE OF COURSE** : New | Core | UG

**COURSE DURATION** : 4 weeks (25 Feb'19 - 22 Mar'19)

**INTENDED AUDIENCE** : Chemistry/Chemical Science

**EXAM DATE** : 28 April 2019

**PRE-REQUISITES** : Basic Organic Chemistry courses (1st year level)

**INDUSTRIES APPLICABLE TO** : Pharma Companies

### COURSE OUTLINE :

Reactive intermediates are one of the important subjects in basic organic chemistry courses. Among different reactive intermediates, carbene & nitrene being neutral and highly electron deficient species play a significant role in various organic transformations. In this course we will disclose its generation, stability, structure, reactivity etc. Next, the application of these reactive intermediates in various organic reactions will be disclosed in detail. Furthermore, the course will accommodate related assignments which might help in various competitive exams in future.

### ABOUT INSTRUCTOR :

Dr. Rajarshi Samanta did his BSc (2002) and MSc (2004) from Department of Chemistry, Jadavpur University. He received his PhD from IICT, Hyderabad under the supervision of Prof. Tushar Kanti Chakraborty in 2010. After completing his postdoctoral studies under the supervision of Dr. A. P. Antonchick at Max-Planck Institute of Molecular Physiology (Dortmund, Germany), he joined IIT Kharagpur in September 2013. His research interests include transition metal catalysed organic transformations, asymmetric synthesis, natural product synthesis.

### COURSE PLAN :

**Week 01** : Structure and Reactivity of carbenes

**Week 02** : Generation of carbenes

**Week 03** : Different types of reactions with carbenes

**Week 04** : Generation and different reactions of nitrenes and related intermediates