

# Unit 11 - Attosecond Chemical Dynamics – Theoretical Point of View

## Course outline

How to access the portal?

Introduction and Mathematical Representation

Nonlinear Effects

Dispersion Effects and Transverse Electromagnetic Mode

Construction of Ultrafast Laser and Measurement of Pulses

Measurement Techniques in Ultrafast Spectroscopy, and their kinetic and quantum mechanical models

Ultrafast Processes in Physical Chemistry – Photophysics, Photochemistry, Solid State, Transition Metal Complexes and Biomolecules

Maxwell's Equations

Ab Initio Molecular Dynamics of Photochemistry and Photophysics – Part 1

Ab Initio Molecular Dynamics of Photochemistry and Photophysics – Part 2

Attosecond Chemical Dynamics – Theoretical Point of View

Attosecond Chemical Dynamics 1

Attosecond Chemical Dynamics 2

Quiz : Assessment week 10

Attosecond Chemical Dynamics – Experimental Point of View

Femtochemistry of Nanocatalysis

## Assessment week 10

The due date for submitting this assignment has passed.  
As per our records you have not submitted this assignment.

**Due on 2019-10-09, 23:59 IST.**

1) High harmonic generation produces

1 point

- X-ray  
 microwave  
 near infrared  
 terahertz radiation.

No, the answer is incorrect.

Score: 0

Accepted Answers:

*X-ray*

2) In HHG process, ionization occurs due to

2 points

- multiphoton ionization  
 above threshold ionization  
 single photon ionization  
 tunnel ionization

No, the answer is incorrect.

Score: 0

Accepted Answers:

*multiphoton ionization*

3) phase-matching in HHG is primarily controlled by

1 point

- pressure of the gaseous medium  
 thickness of the nonlinear crystal  
 refractive index of plasma  
 temperature of the medium

No, the answer is incorrect.

Score: 0

Accepted Answers:

*pressure of the gaseous medium*

4) Molecular electrostatic potential includes potential

1 point

- due to electron-electron interaction  
 due to electron-nuclei interaction  
 due to both electron-electron and electron-nuclei interaction  
 due to none of above

No, the answer is incorrect.

Score: 0

Accepted Answers:

*due to both electron-electron and electron-nuclei interaction*

5) The recombination step in HHG process releases

1 point

- subatomic particles  
 X-ray radiation  
 sound  
 microwave radiation

No, the answer is incorrect.

Score: 0

Accepted Answers:

*X-ray radiation*

6) What does make the HHG process a self-probing spectroscopy

1 point

- ionization step  
 recombination step  
 acceleration step  
 strong laser field.

No, the answer is incorrect.

Score: 0

Accepted Answers:

*recombination step*

7) High harmonic generation is carried out in

1 point

- a gaseous medium  
 a nonlinear crystal  
 vacuum  
 both gaseous medium and solid state

No, the answer is incorrect.

Score: 0

Accepted Answers:

*a gaseous medium*

8) What is the spin multiplicity of a doublet state?

1 point

- 2  
 5  
 1  
 4

No, the answer is incorrect.

Score: 0

Accepted Answers:

2

9) What is the spin multiplicity of  $\text{CHCl}_3$  in its neutral ground state

1 point

- 1  
 2  
 3  
 5

No, the answer is incorrect.

Score: 0

Accepted Answers:

1

You were allowed to submit this assignment only once.