

SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES

Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai

Approved by Pharmacy Council of India, New Delhi.

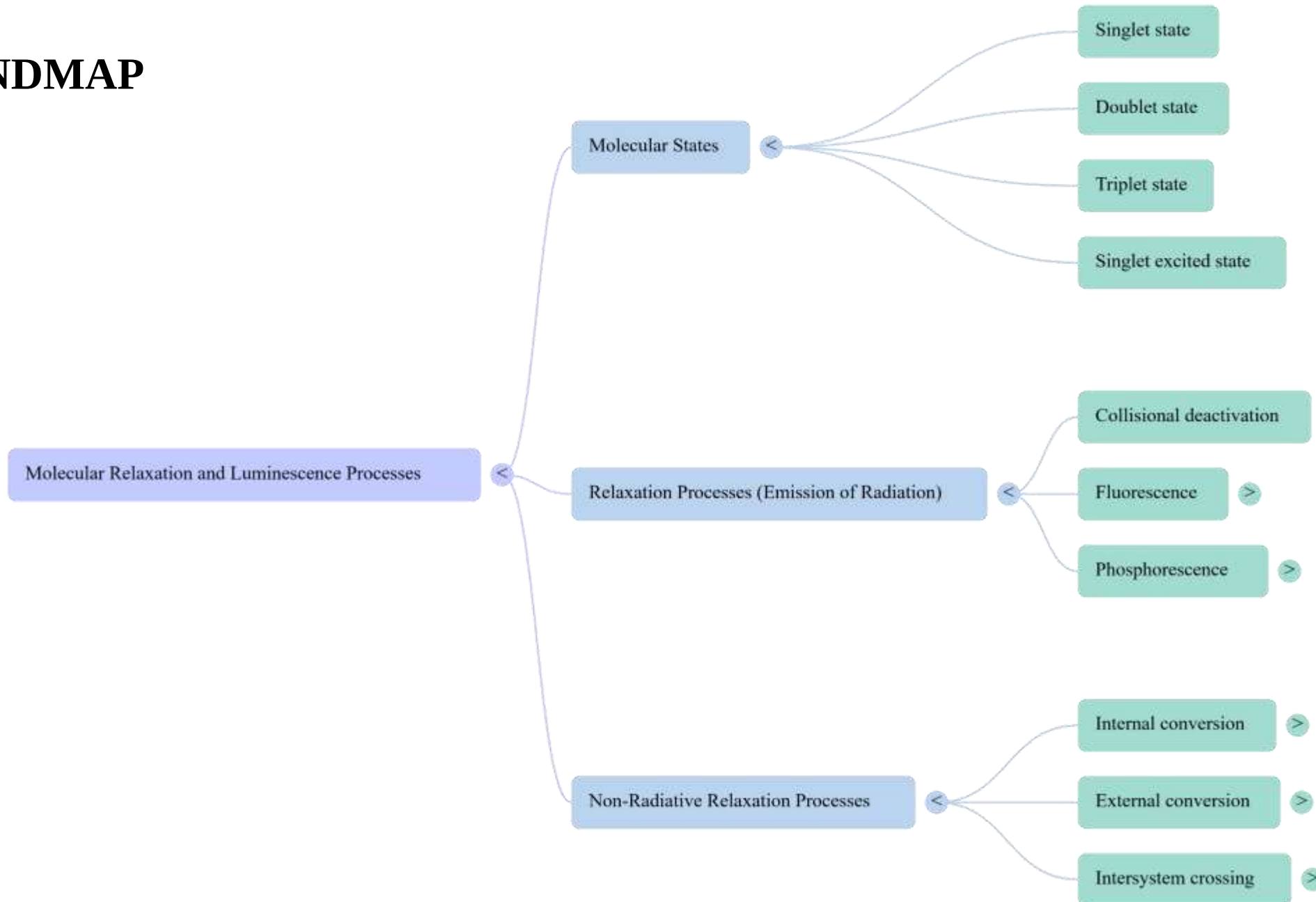
Coimbatore -641035

COURSE NAME: INSTRUMENTAL METHODS OF ANALYSIS (BP 701 T)

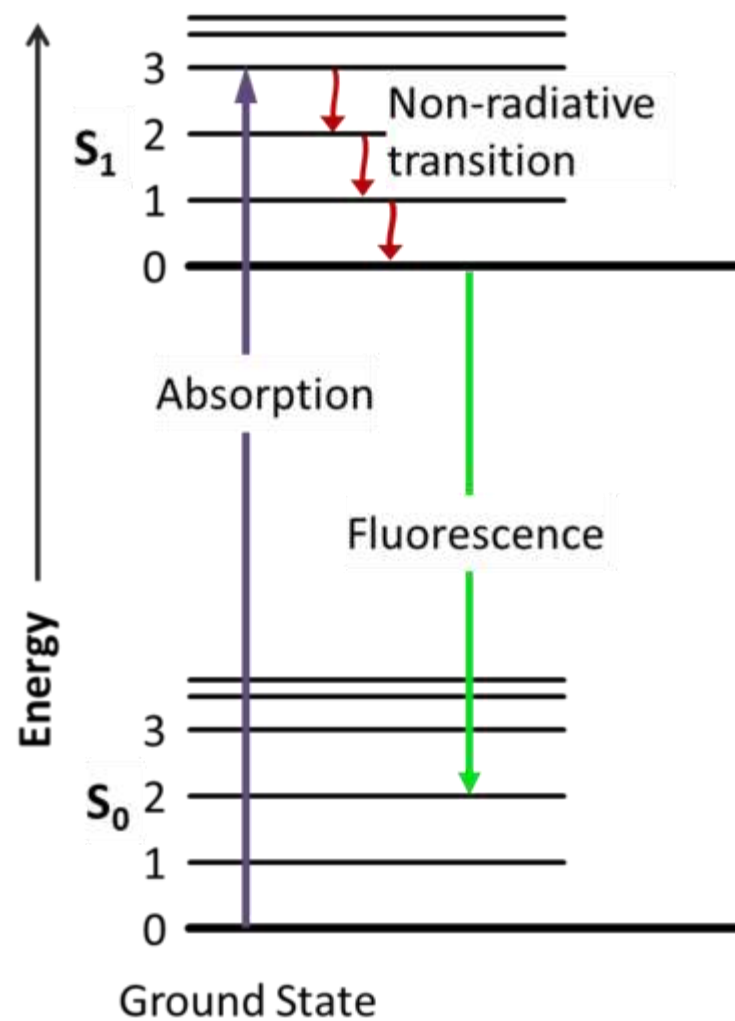
VII SEM/ IV YEAR

TOPIC 7: PRINCIPLE INVOLVED IN FLUORIMETRY

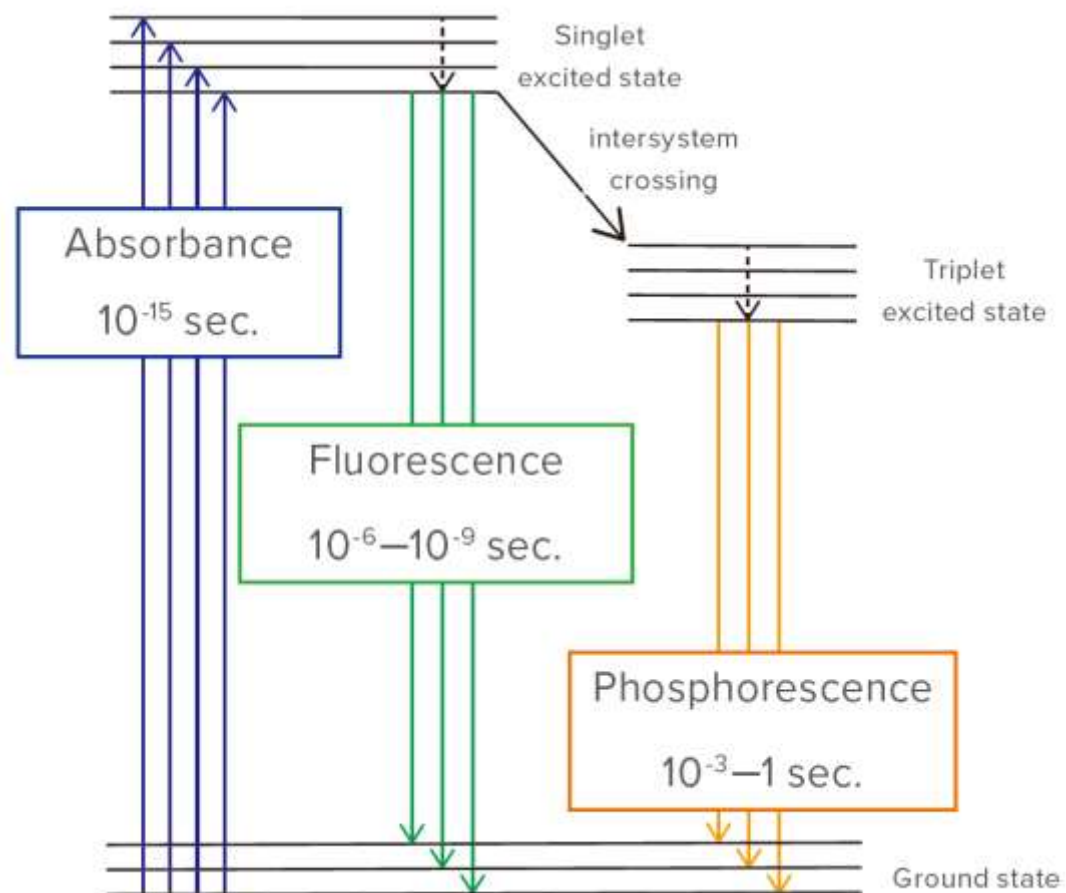
MINDMAP



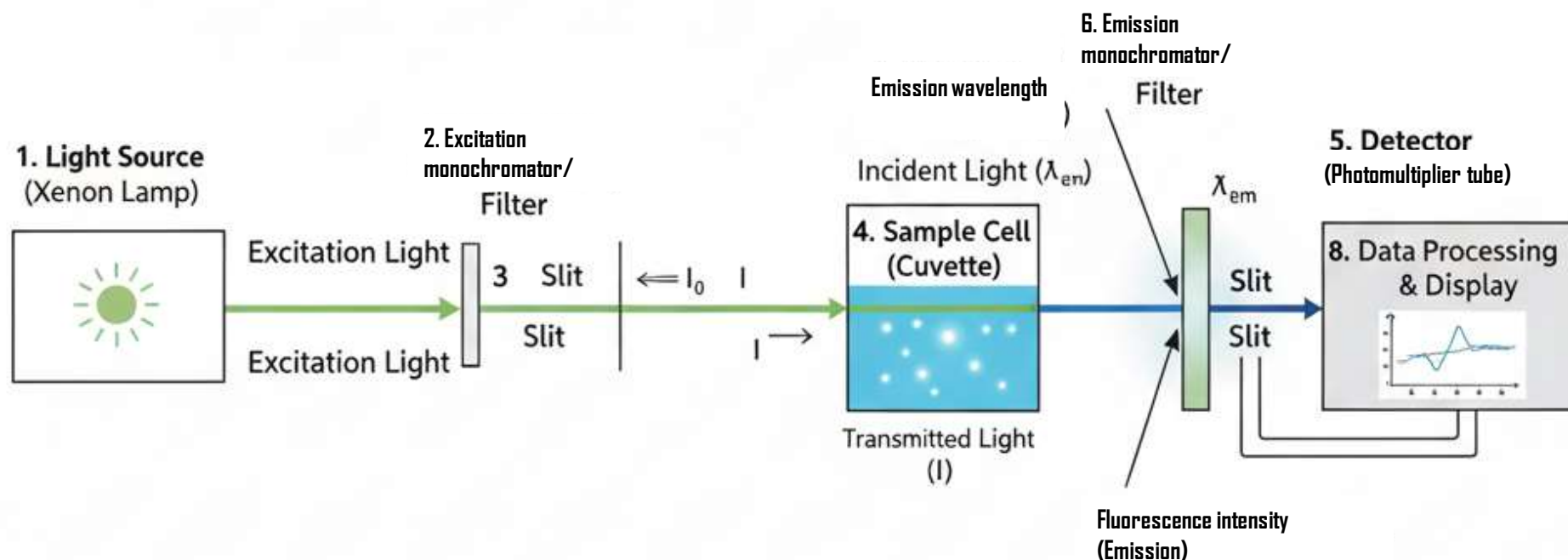
Fluorescence



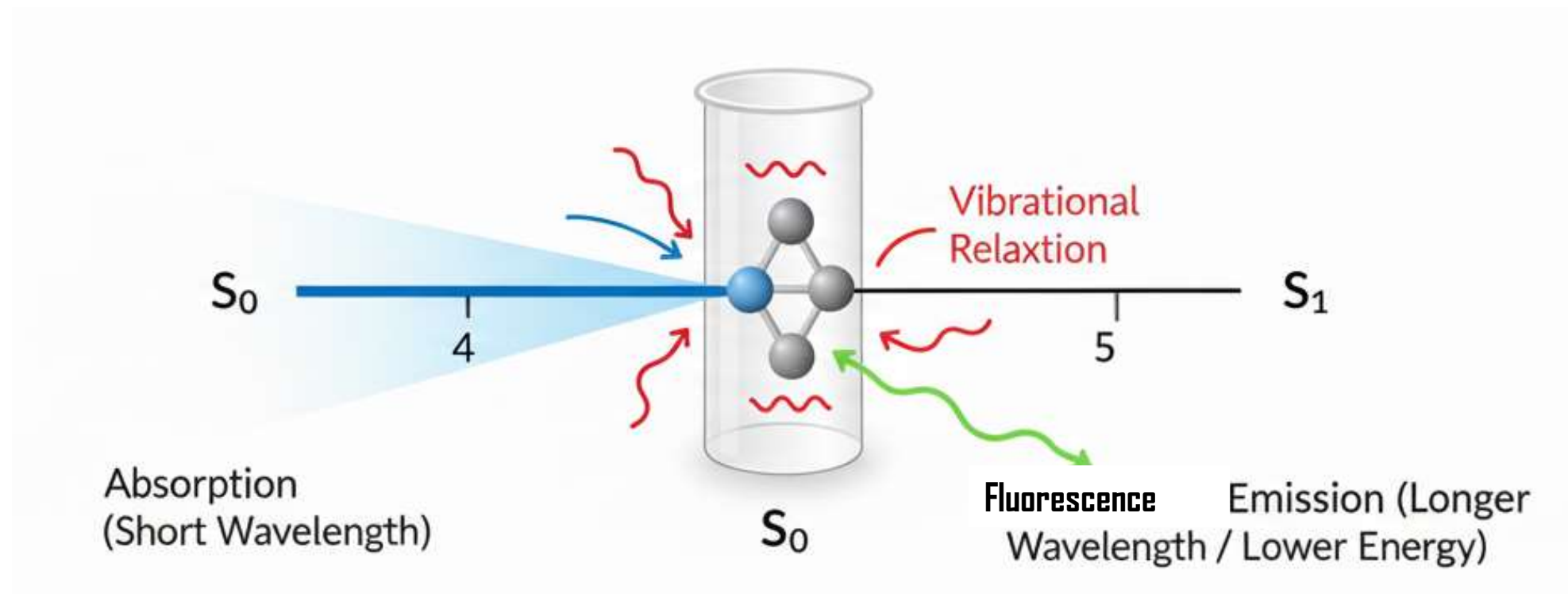
Phosphorescence



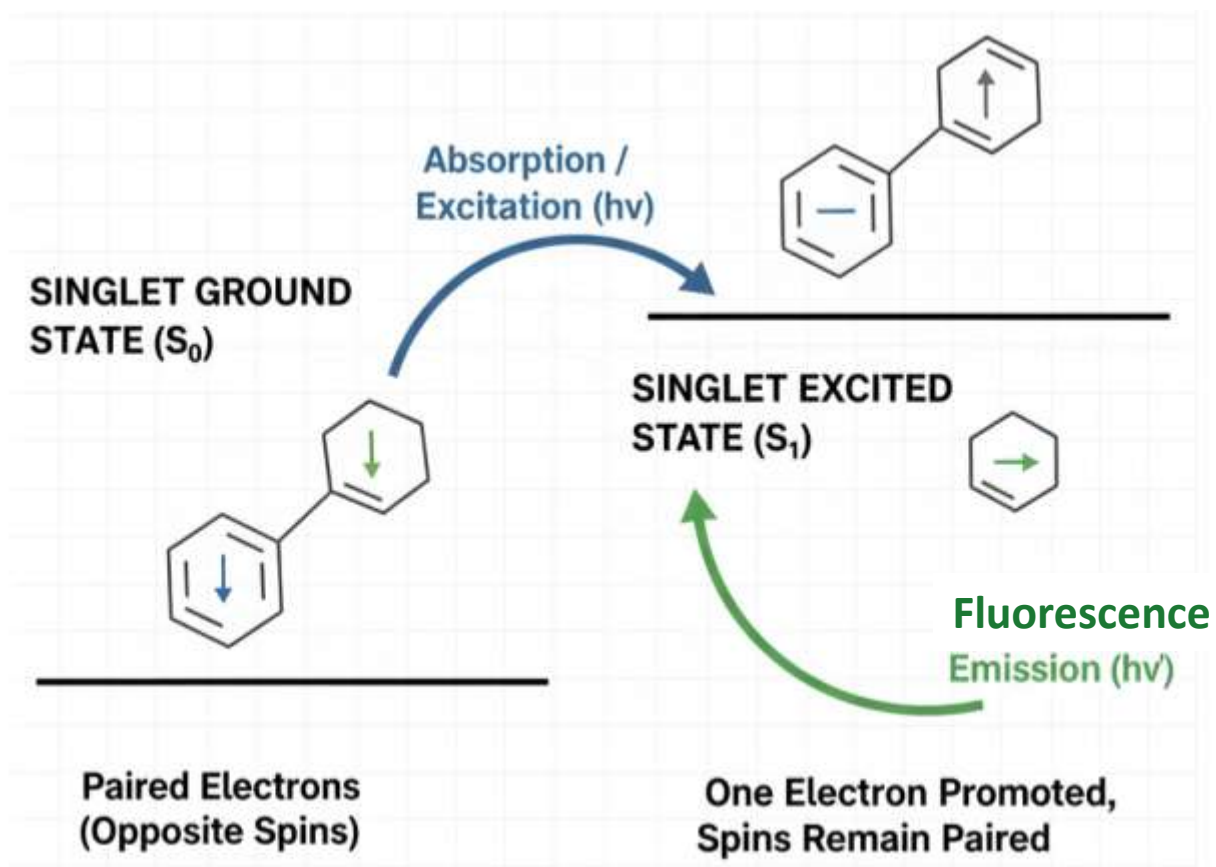
Fluorimeter



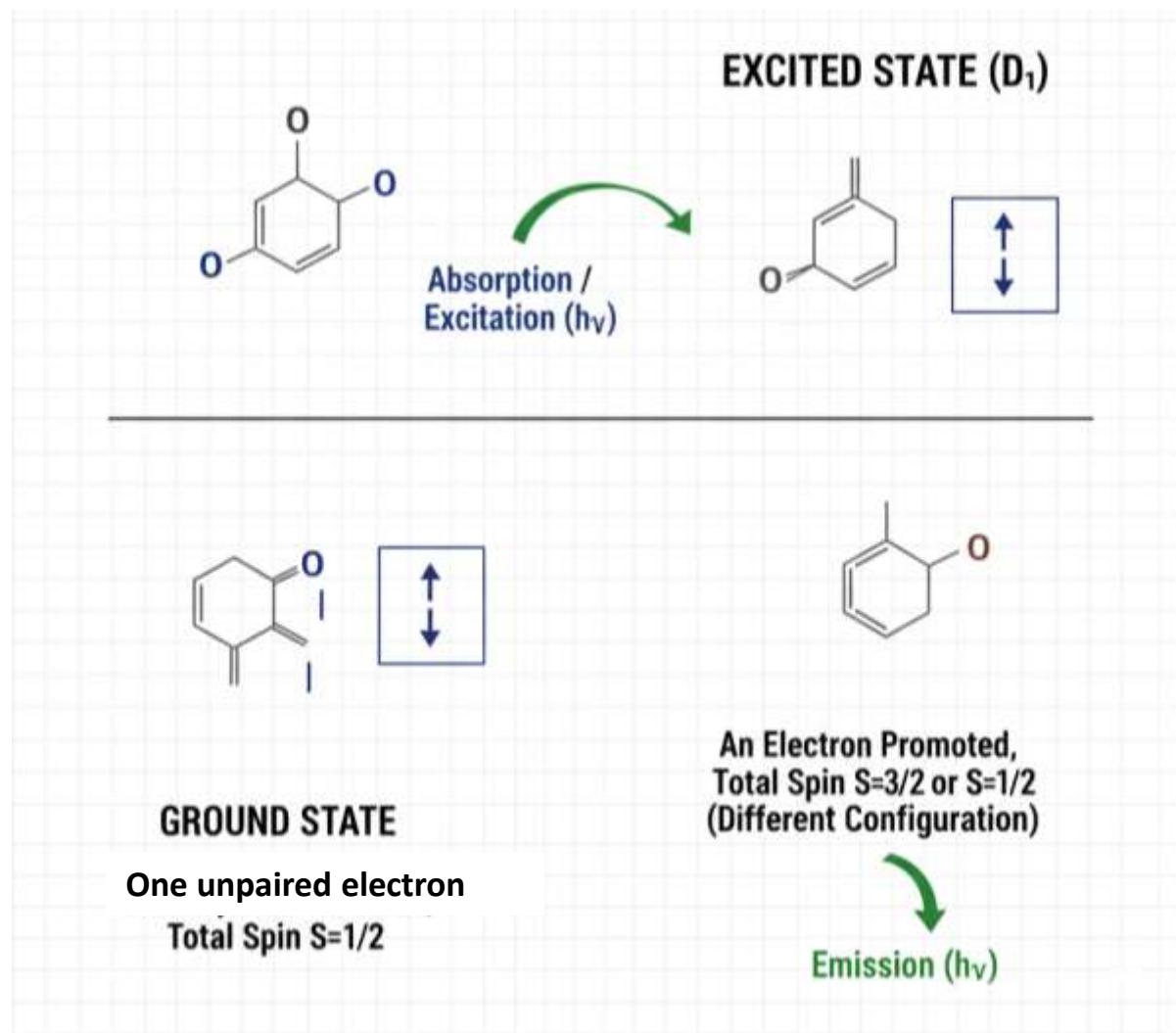
Principle of fluorimetry



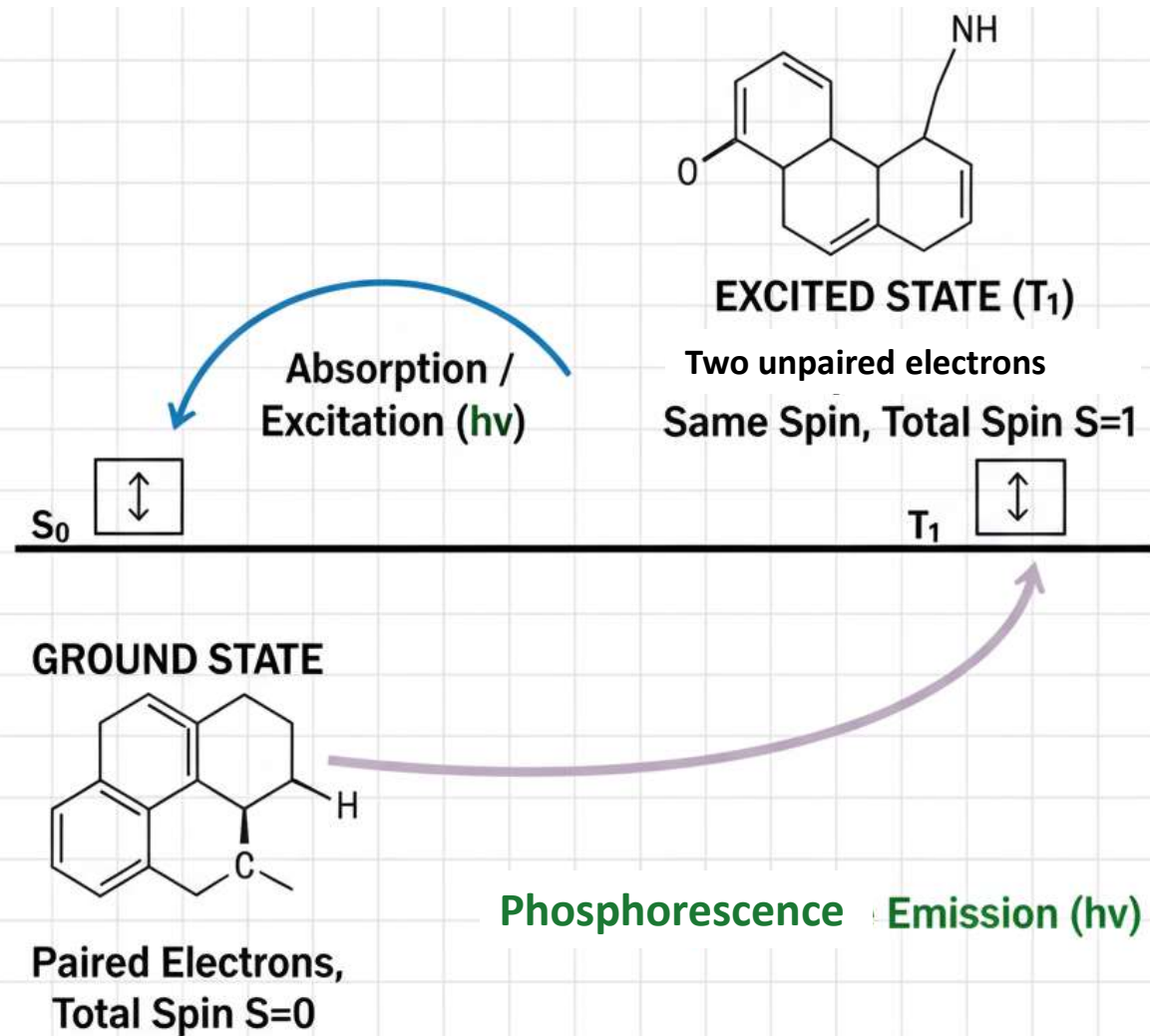
Singlet electronic states



Doublet electronic states

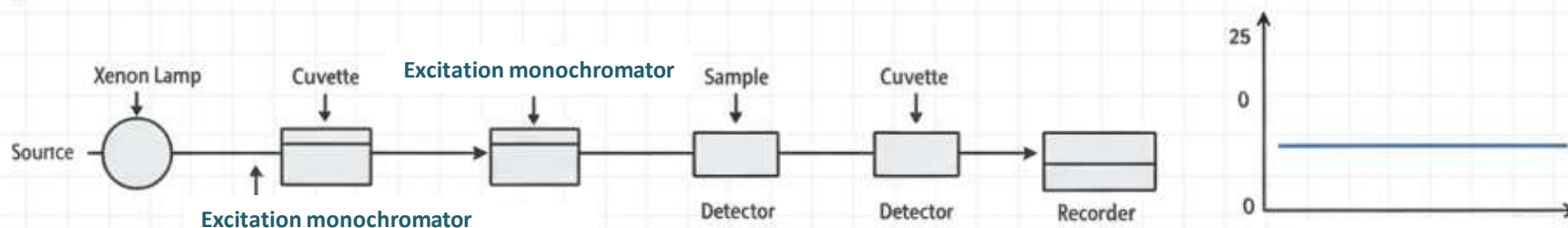


Triplet electronic states

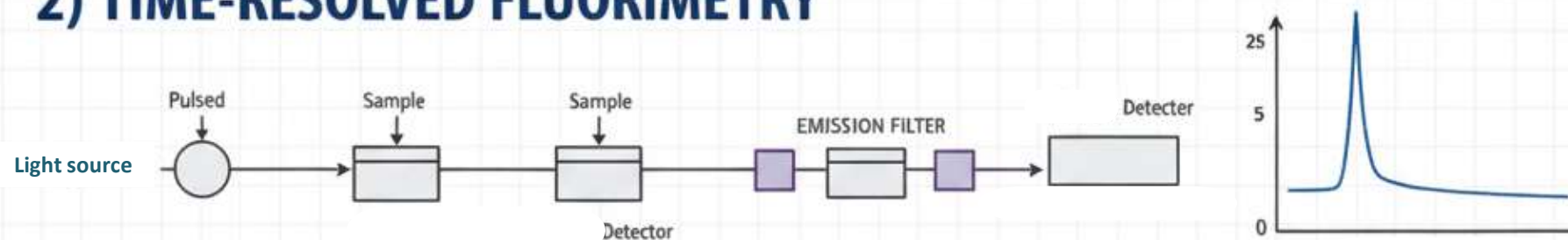


Types of fluorimetry

1) STEADY-STATE FLUORIMETRY



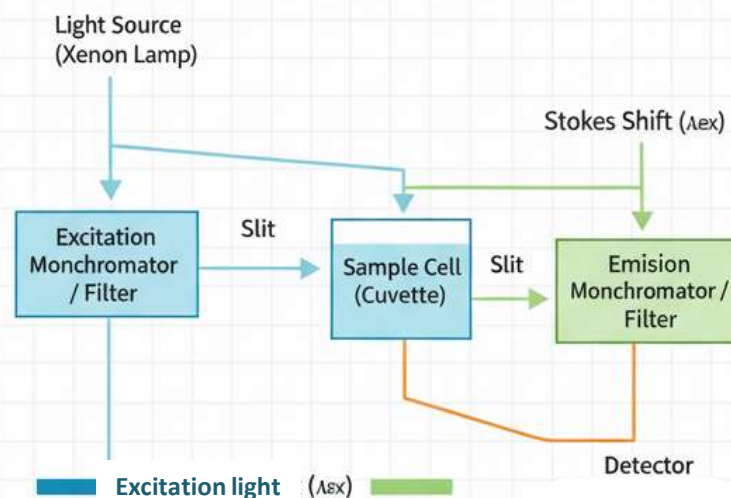
2) TIME-RESOLVED FLUORIMETRY



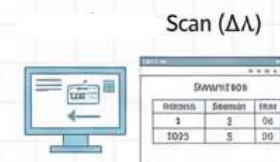
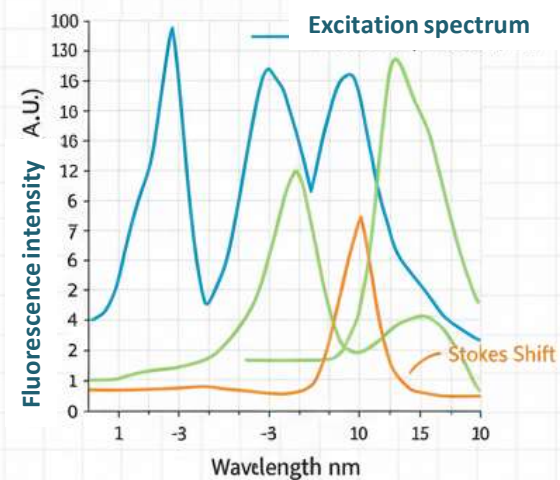
Types of fluorimetry

3) SPECTROFLUORIMETRY

1. INSTRUMENTATION



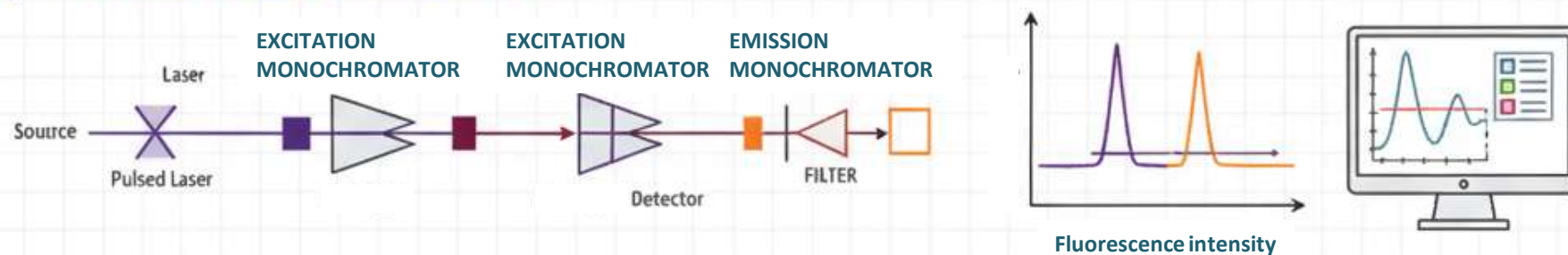
2. PRINCIPLE & DATA



Data Processing & Display

Types of fluorimetry

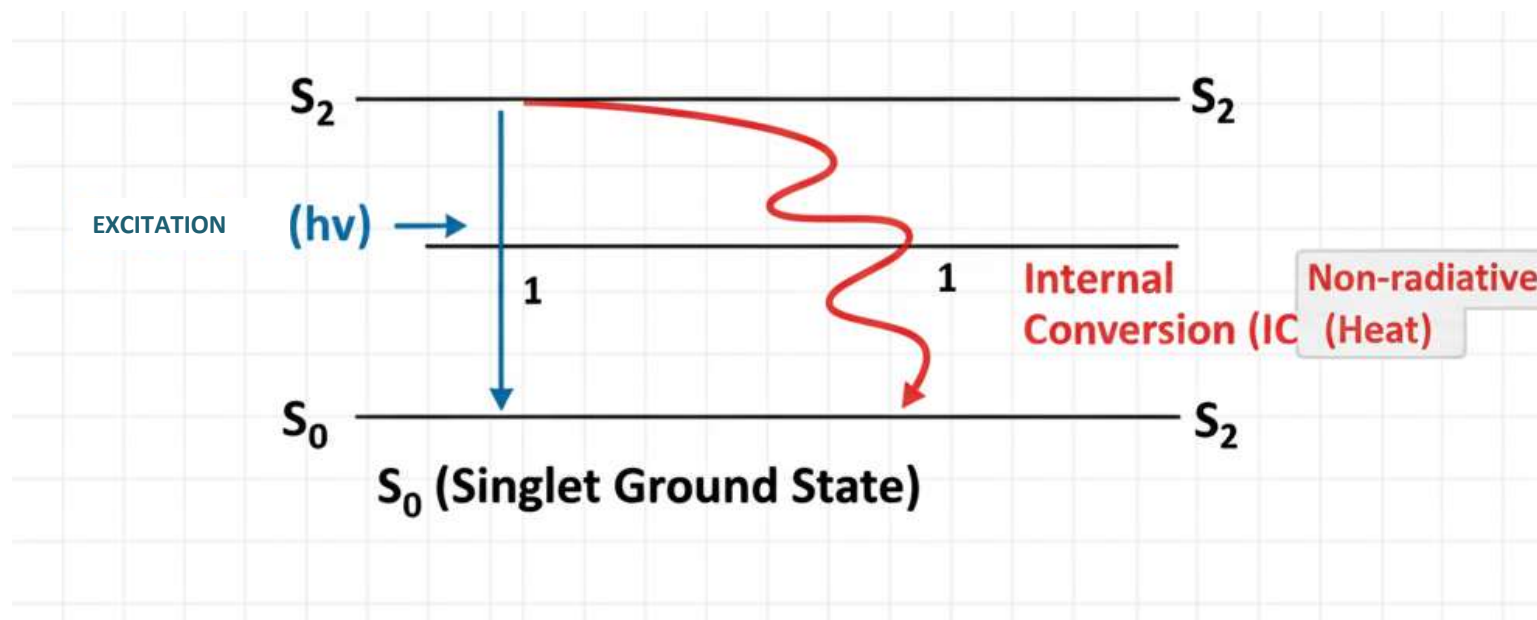
4) FILTER FLUORIMETRY



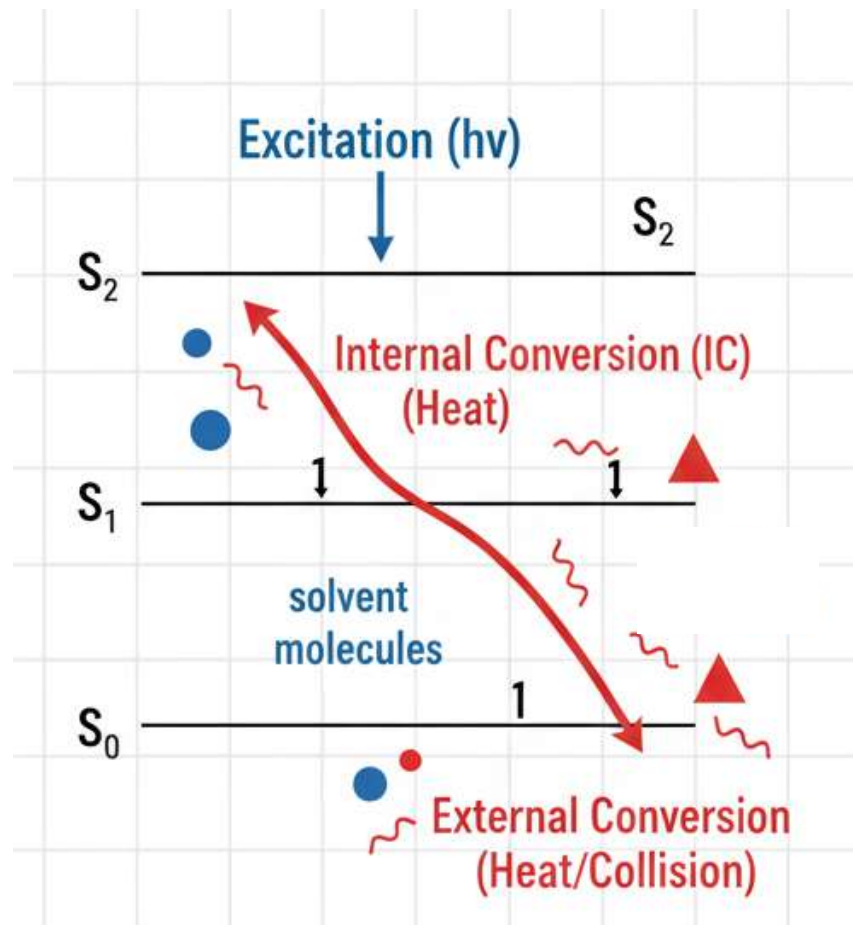
5) MICROFLUORIMETRY



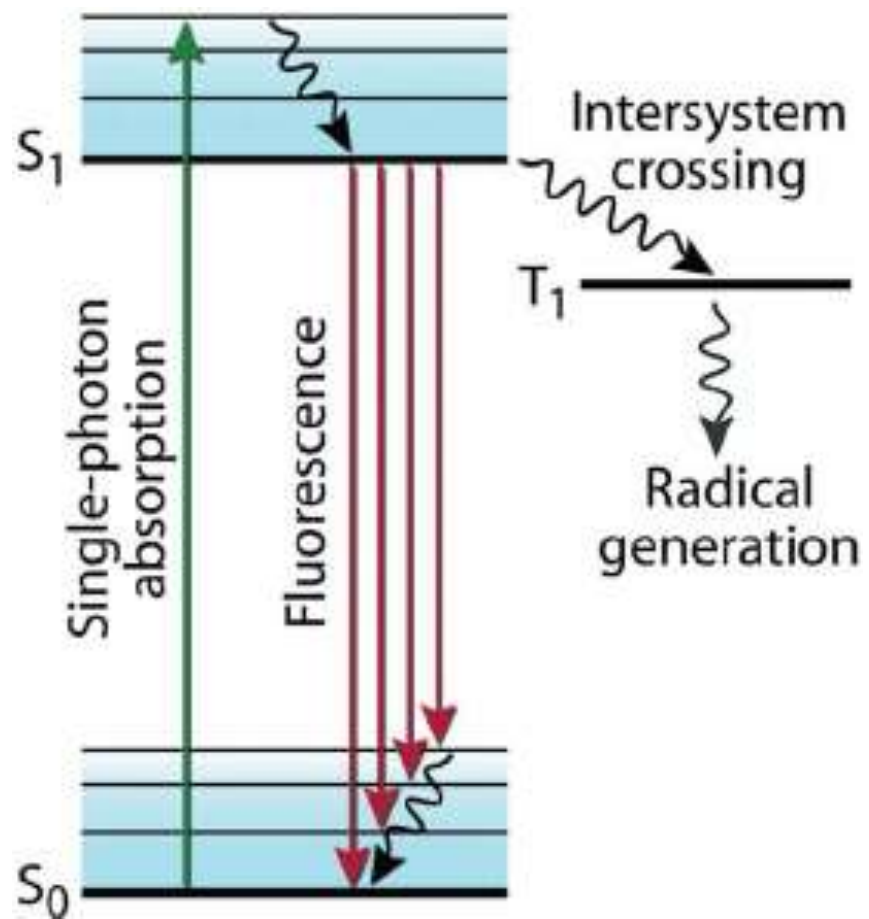
Internal conversion



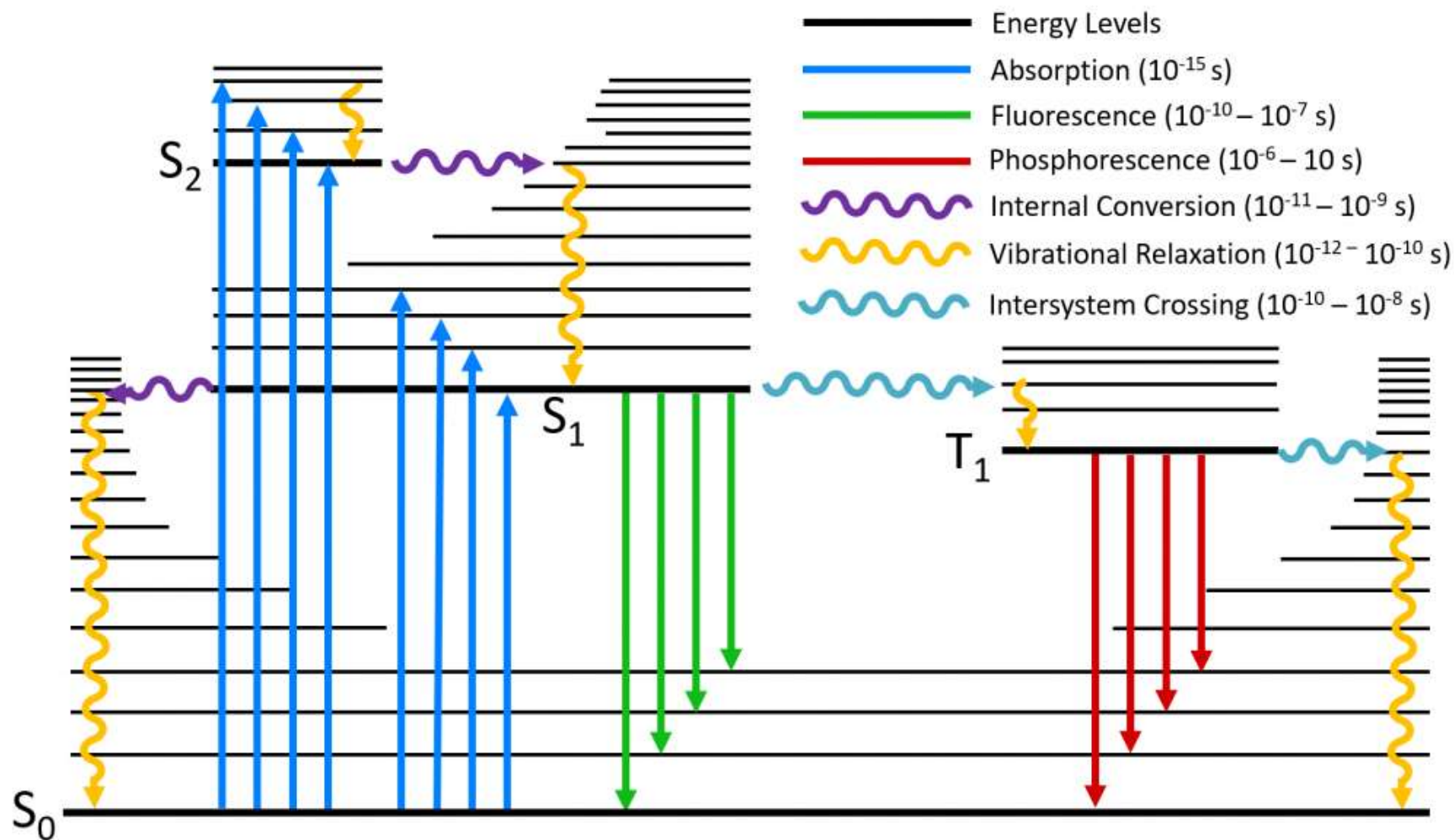
External conversation



Intersystem crossing



Summary

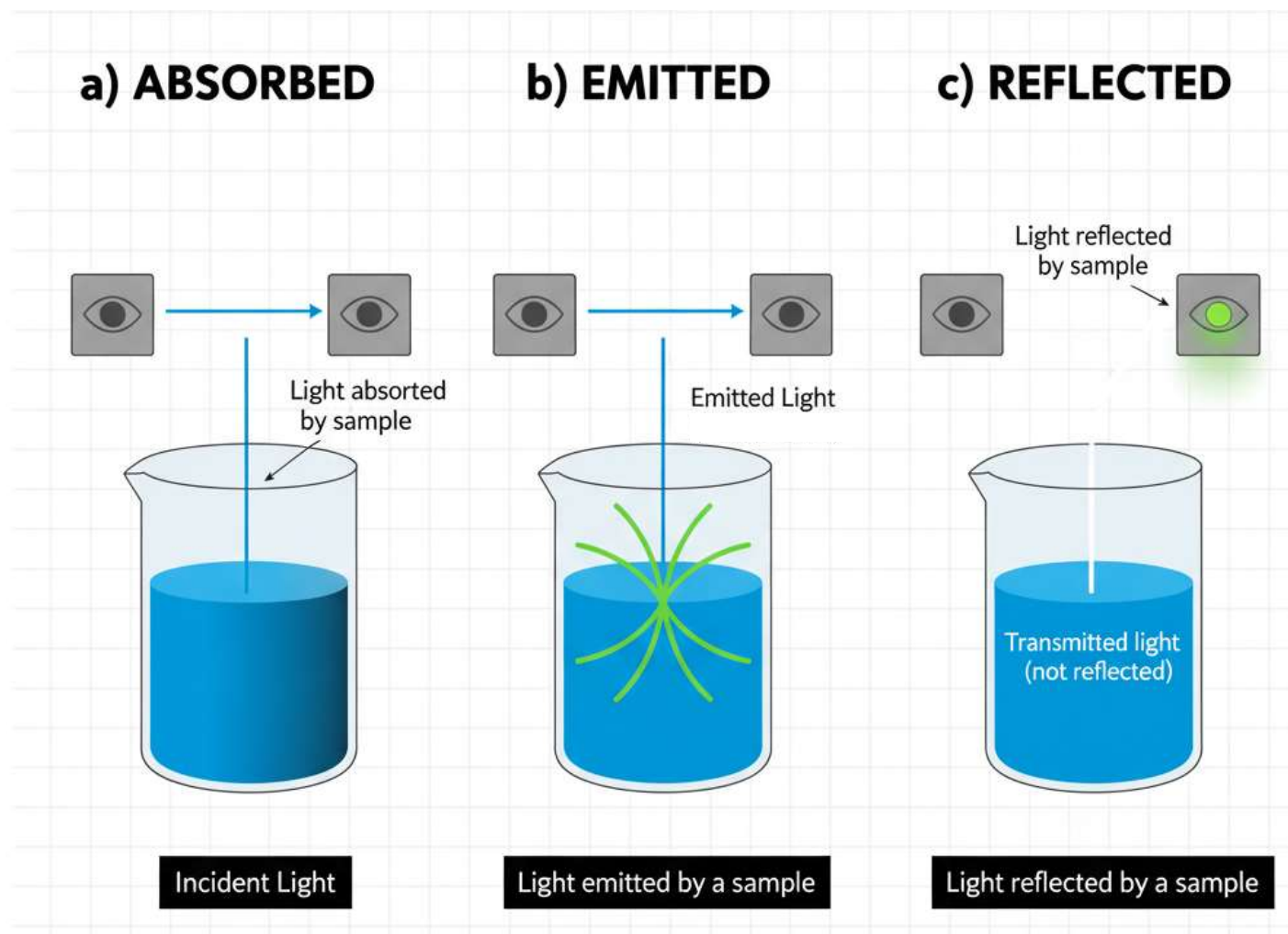


Assessment

1) Fluorimetry is based on the measurement of:



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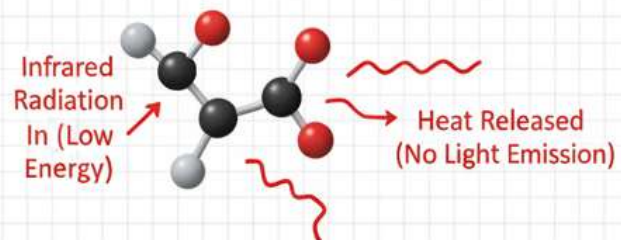


Assessment

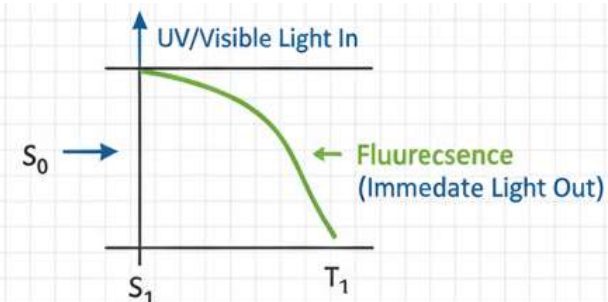
2) When Fluorescence will occur?



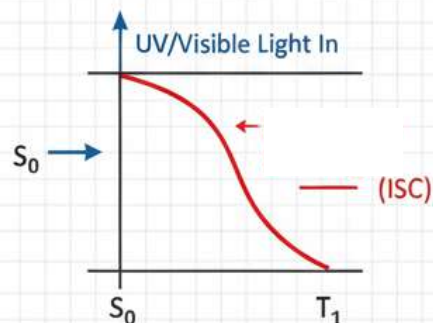
2) Fluorescence occurs when:



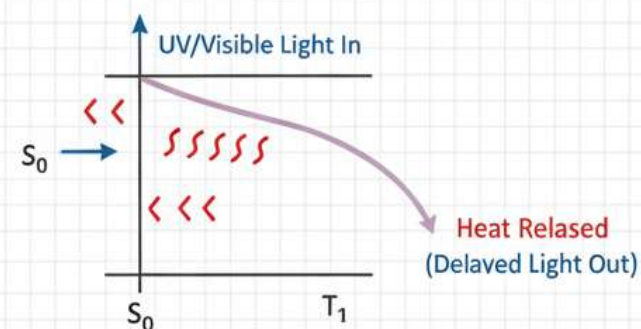
a) A molecule emits heat absorbing infrared radiation, through vibrations.



b) A molecule emits light immediately after absorbing UV/visible light)



c) A molecule emits after a long delay (from a triplet state).



d) A molecule emits heat instead of light

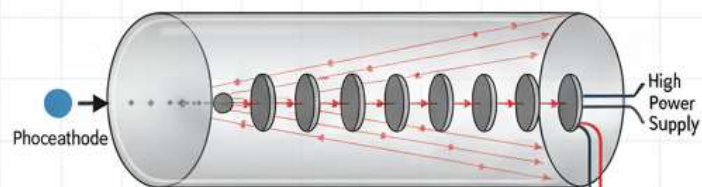
Assessment

3) Which type of detector is commonly used in fluorimetry?

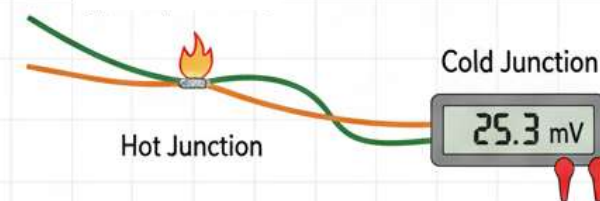


3) Which type of detector is commonly used in fluorimetry?

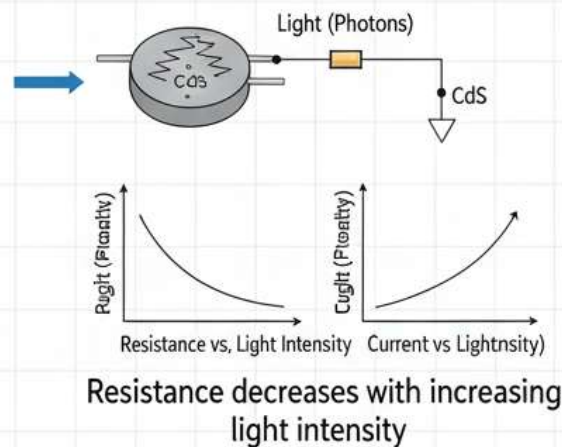
a) PHOTOMULTIPLIER TUBE (PMT)



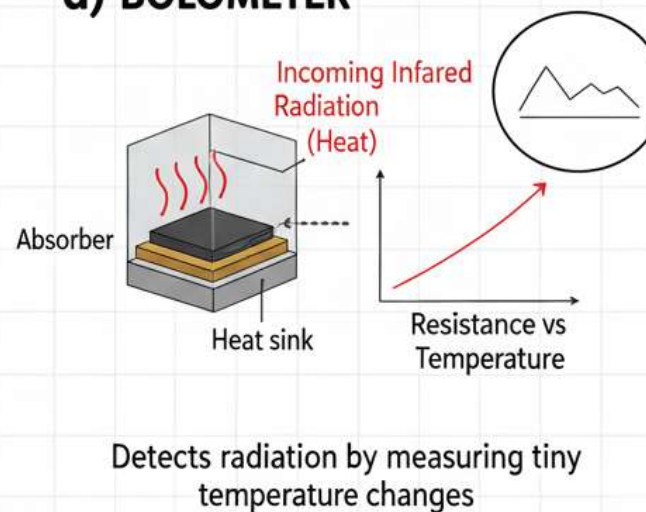
b) THERMOCOPPLE



c) PHOTORESISTOR (LDR)



d) BOLOMETER



References

1. Silverstein RM, Webster FX, Kiemle DJ, Bryce DL. Spectrometric identification of organic compounds. 8th ed Hoboken, NJ: John Wiley & Sons; 2014.
2. Pavia DL, Lampman GM, Kriz GS, Vyvyan JR. Introduction to spectroscopy. 5th ed. Stamford, CT: Cengage Learning; 2014.
3. Sharma YR. Elementary organic spectroscopy: principles and chemical applications. 5th ed. New Delhi, India: S. Chand & Company; 2013.
4. Kalsi PS. Spectroscopy of organic compounds. 6th ed. New Delhi, India: New Age International Publishers; 2004.
5. Banwell CN, McCash EM. Fundamentals of molecular spectroscopy. 4th ed. New Delhi, India: Tata McGraw-Hill Education; 1994.

Thank
you!