



P.D.E.A.'S

Waghire College of Arts Commerce and Science, Saswad

Tal-Purandar, Dist-Pune

Department of Chemistry

“One Day Online Workshop on UV-Visible Spectroscopy”

Under

DBT Star College Scheme (2020-21)

10th March 2021

By

Guest speaker: 1) Prof. Ganesh B Nigade (Assistant Professor, S.G.R.S. College of Pharmacy, Saswad.)

“Learning gives Creativity, Creativity leads to thinking, Thinking provides knowledge, Knowledge makes us Great...It is with great pride and pleasure that, Waghire College of Arts, Commerce and Science, Saswad successfully conducted One Day online workshop on “UV-Visible Spectroscopy” Organised by Department of Chemistry under DBT Star College Scheme On 10th March 2021 at 11:00 am to 02:00 pm. For this one day online workshop Prof. Ganesh Nigade, Assistant Professor, S.G.R.S. College of Pharmacy, Saswad, is invited as a Resource Person and he delivered a very informative talk on “UV-Visible Spectroscopy”.

The workshop is conducted in two sessions. The Session –I is conducted at 11:00 am to 12:00 noon. In the session –I, the following subtopics are covered:

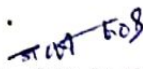
- General Introduction to spectroscopy
- Electromagnetic Radiation and electromagnetic spectrum


- General instrumentation
- Absorption and Emission Spectroscopy
- Introduction and Principle of UV-Visible Spectroscopy.
- Details of Shifts in UV –Visible Spectroscopy
- Chromophore and Auxochrome with suitable examples.
- Different application of UV –Visible Spectroscopy.


The Session –II is conducted at 1:00 Pm to 2:00 Pm. In the session –II , Practical Demonstration is explained in details that is how to use –


- UV-Visible spectroscopy,
- How to calibrate?
- How to prepare the sample?
- How to record the spectra?
- How to interpret the Spectra?
- How to find out the λ_{max} from given spectra.

In this online workshop on UV-visible spectroscopy near about about 100 students has joined. Lastly, the session is open for discussion students and teacher have asked their crucial questions and resource persons cleared their quires with satisfactory answer. This online workshop on UV-Visible Spectroscopy is very much useful for students and teachers to work on UV-Visible spectroscopy. The Prof. Gajendra Ahiwale introduced the Guest resource person and lastly vote of thanks is delivered by Dr. S.B. Rathod.


Dr. S.B. Rathod
 Activity Co-ordinator


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Dr. V.V. Patankar
 Co-Ordinator
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Dr. Sushama Bhosale
PRINCIPAL
 Waghire College, Saswad,
 Tal. Purandar, Dist. Pune.

Principles of Spectroscopy

1. Absorption Spectroscopy:

•An analytical technique which concerns with the measurement of absorption of electromagnetic radiation.

•e.g. UV (185 - 400 nm) / Visible (400 - 800 nm) Spectroscopy, IR Spectroscopy (0.76 - 15 μm)

(97)



Gouri Kadam



Harshada Jagadale



Harshada Shitare



Ketan Chavan

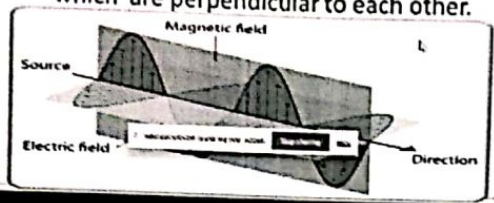






Kamal Patil



Electromagnetic Radiation

- Electromagnetic radiation consist of discrete packages of energy which are called as photons.
- A photon consists of an oscillating electric field (E) & an oscillating magnetic field (M) which are perpendicular to each other.



-  *Dr. Sandip Rathod (You)*
-  *Dr. Sandip Rathod* >
-  *Ganesh Nigade* >
-  *Keval Kachare* >

Also in the meeting (97)

Beer's Law

$$A = E.C.J$$

$$T = \frac{I}{I_0} \text{ OR } -\log T = \log \frac{I}{I_0} = A$$

From the equation it is seen that the absorbance which is also called as optical density (OD) of a solution in a container of fixed path length is directly proportional to the concentration of a solution.

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Dr. Sandip Rathod (You)



Dr. Sandip Rathod >



Ganesh Nigade >

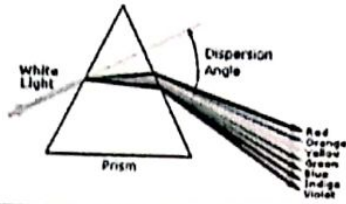


Narendra Kamble >

Also in the meeting (78)



Electromagnetic Radiation



Violet	400 - 420 nm	Yellow	570 - 585 nm
Indigo	420 - 440 nm	Orange	585 - 620 nm
Blue	440 - 490 nm	Red	620 - 780 nm
Green	490 - 570 nm		

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Dr. Sandip Rathod (You)



Dr. Sandip Rathod >



Ganesh Nigade >



Prajakta More >

Also in the meeting (93)





3G 4G 12:21 PM 4G+


Auxochrome
e.g. Benzene $\lambda_{max} = 255 \text{ nm}$ c1ccccc1
Phenol $\lambda_{max} = 270 \text{ nm}$ Oc1ccccc1
Aniline $\lambda_{max} = 280 \text{ nm}$ Nc1ccc(O)cc1


Call, End Call, Mute, Unmute

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 *Dr. Sandip Rathod (You)*

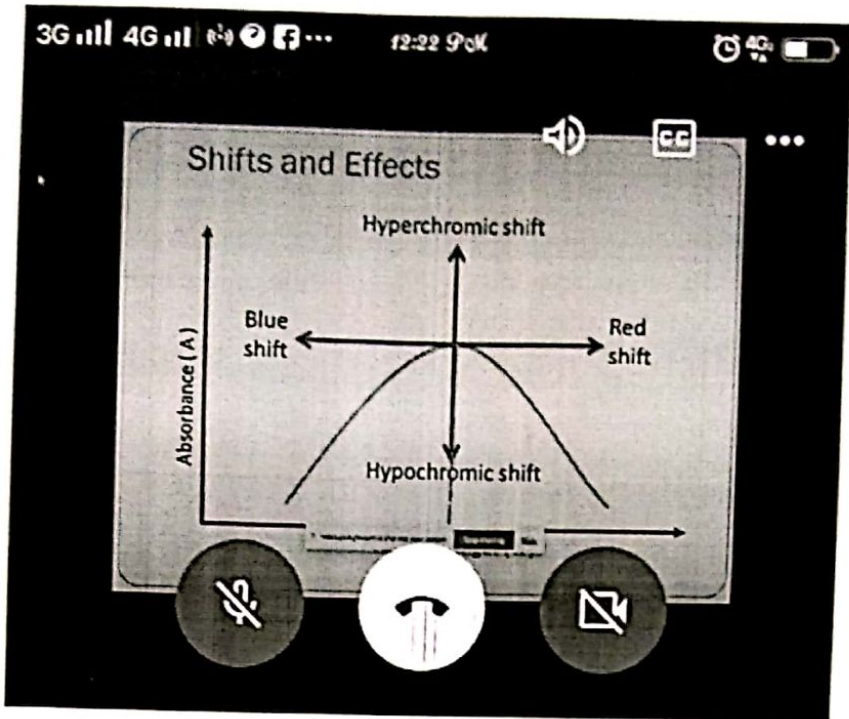
 *Dr. Sandip Rathod* >

 *Ganesh Nigade* >


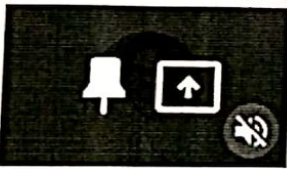


 *Prajakta More* >

Also in the meeting (67)





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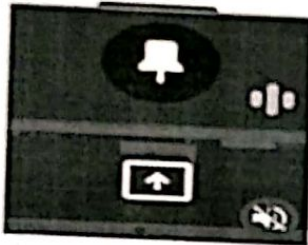
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Prajakta More >

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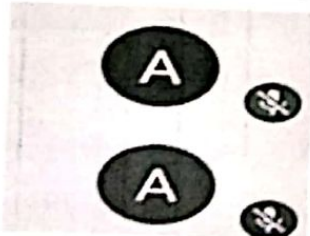
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Suraj bhongale >

Ganesh Nigade >

Also in the meeting (43)



Abhijit Bhatnagar >

Ashwarya Bhujbal >



Dr. S.B.
Dr. S.B. Rathod
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Pune District Education Association's

WAGHIRE COLLEGE OF ARTS, COMMERCE AND SCIENCE, SASWAD




University of Pune

Tal- Purandar Dist- Pune,

DEPARTMENT OF CHEMISTRY
One Day Online Workshop on
UV-Visible Spectroscopy
(10 March 2021)

CERTIFICATE OF PARTICIPATION

This is to certify that Chavan Ketan Shrawan of
T.Y.B.Sc. has attended one day one day online Workshop
on "**UV-VISIBLE SPECTROSCOPY**" organized on 10/03/2021. We appreciate and thank his/her active
participation.


Co-ordinator


Principal