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Paper I – Fundamentals of Chemistry (Major)

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- I Year (प्रथम वर्ष)
- Chemistry (रसायन शास्त्र)
- FOC
- Unit 1
- Video Module 1.1




Video Module 1.1

Government of Madhya Pradesh मध्य प्रदेश शासन
Department of Higher Education उच्च शिक्षा विभाग

Tutorial Title / आश्विन का शीर्षक
Ancient Indian Chemical Techniques

Topic Covered / सम्पिदिन विषय
Ancient Indian Scientists, Chemical techniques, Metallurgy, Dyes and Pigments, Cosmetics, Ayurveda

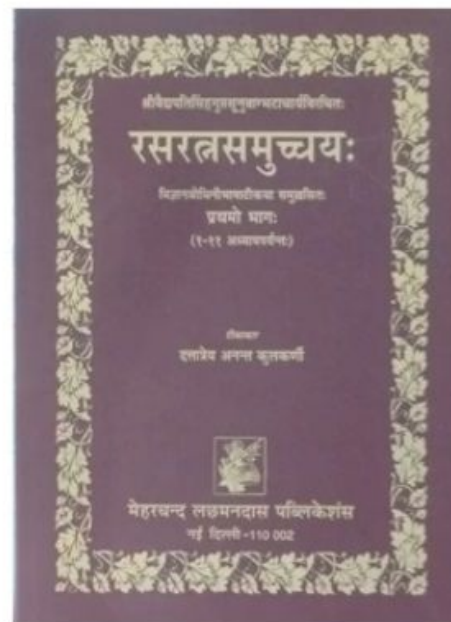
Presented by / प्रस्तुतकर्ता
Dr. Suparna Ghosh
Assistant Professor
Department of Chemistry
Career College
Bhopal (M.P.)





Introduction / परिचय

- ❖ Plays a vital role in the development of science
- ❖ knowns as Rasayan Shastra or Rasatantra or Rasakriya in ancient India
- ❖ Chemical laboratories- Rasakriya-Shala
- ❖ more than 32 instruments were used that time



Dr. Suparna Ghosh

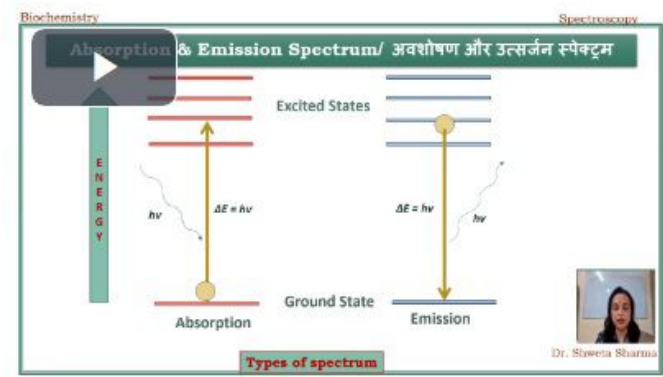
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Biochemical Techniques Paper 1

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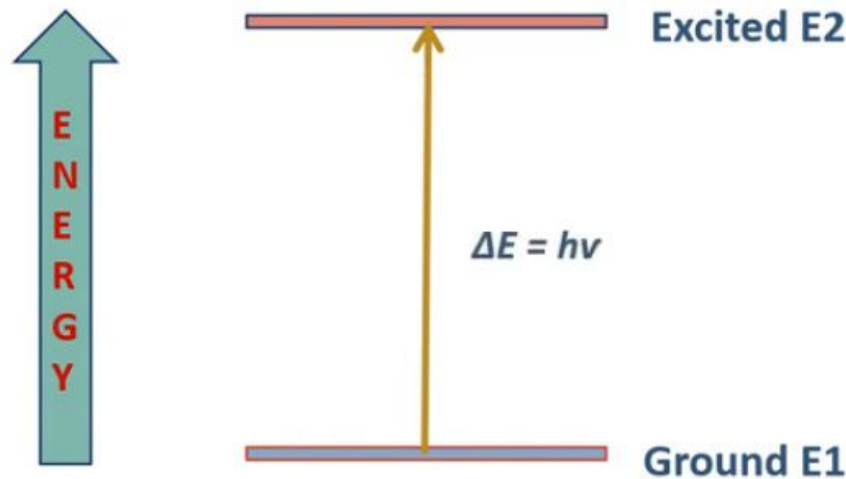
Biochem Tech > Unit 4 SPECTROSCOPY / स्पेक्ट्रमिकी > Video link 4.1

Video link 4.1



Principle of Spectroscopy/ स्पेक्ट्रोस्कोपी का सिद्धांत

Nucleus, electron, atom, and molecules all have discrete energy levels. When there is absorption of a light with energy ΔE equal to the energy gap between the two levels, the energy gets deposited on the electron and it goes to excited state E_2 , from the ground state E_1 with the frequency of the absorbed radiation given by Planck's principle $\Delta E = E_2 - E_1 = h\nu$



Dr. Shweta Sharma

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- Video Module 1.5

Video Module 1.5

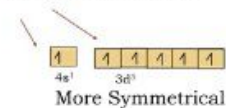
Chemistry

Stability of Orbitals and Electronic Configuration


Causes of Stability of Completely filled and Half filled orbitals/ पूरी तरह से भरे और आधे भरे ऑर्बिटल्स की स्थिरता

Symmetrical Distribution

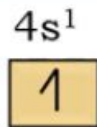
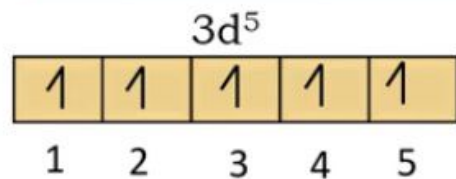
Electronic configuration of chromium is



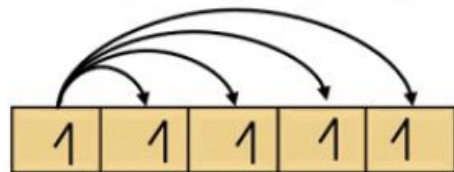
More Symmetrical



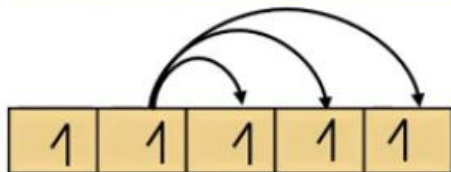
Exchange Energy



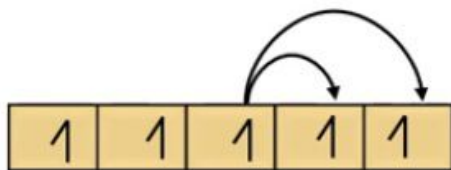
Number of exchanges in 3d⁵ 4s¹ configuration of chromium



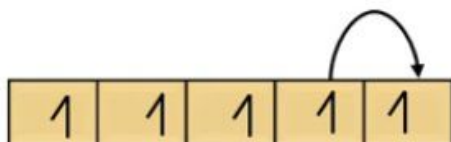
4 exchanges for electron 1



3 exchanges for electron 2



2 exchanges for electron 3



1 exchange for electron 4

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Number of Exchanges = 4 + 3 + 2 + 1



Dr. Anita Singh

Unit operations and Utilities in chemical industries

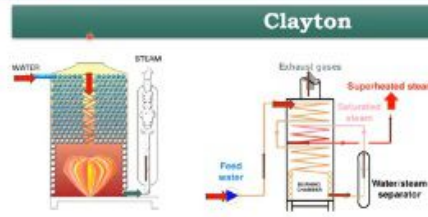
Dashboard Courses Science (विज्ञान) UG (स्नातक) I Year (प्रथम वर्ष)
Industrial Chemistry (औद्योगिक रसायन शास्त्र) paper 2 ICHEM Unit 5 Video-5.4

Video-5.4

Industrial Chemistry

Utilities in Industries

Clayton

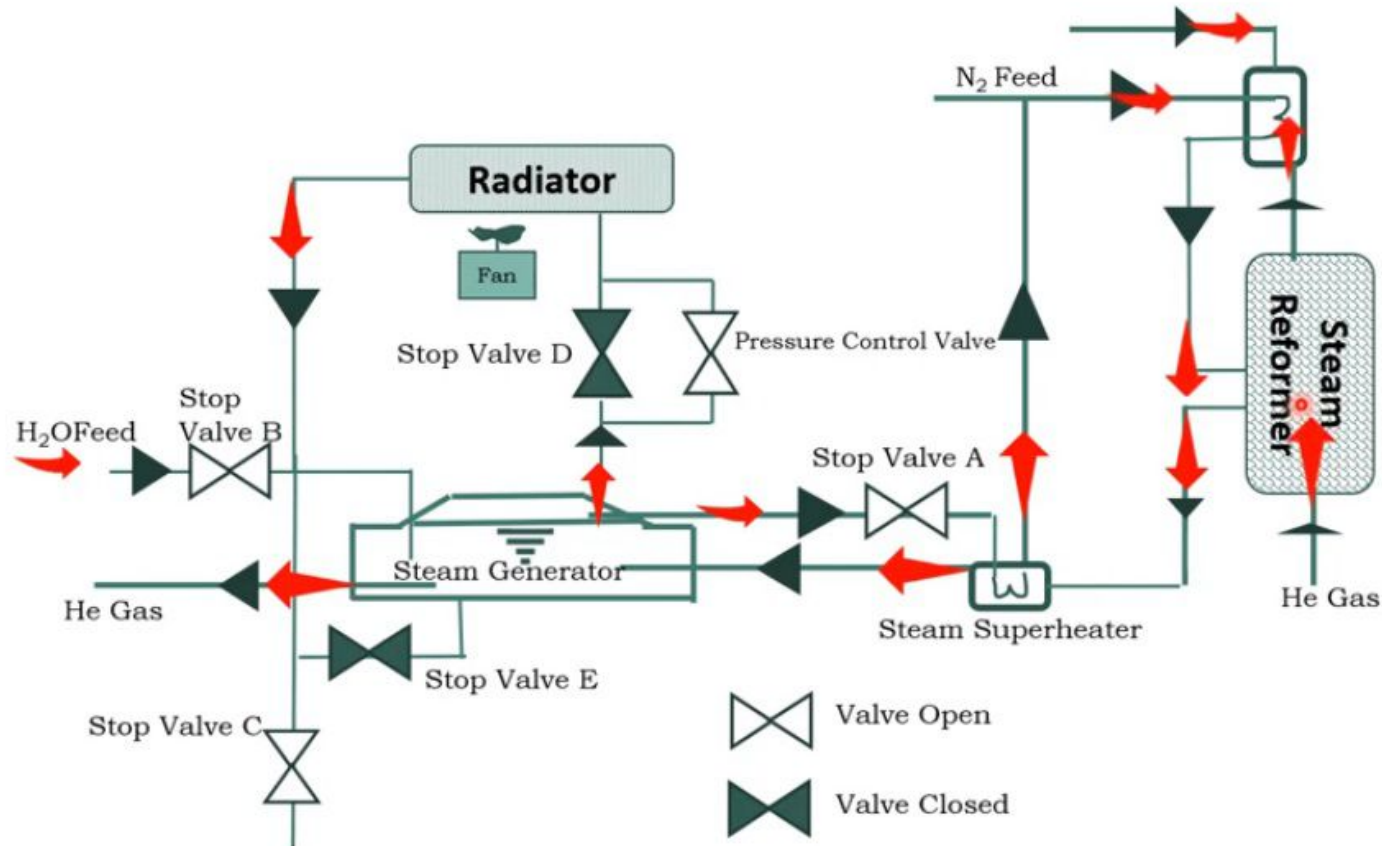


Dr. Ruchi Dubey Sharma

- Similar to the stone-vapour (reversed burner and flow directions).
- Heating coils is mounted within a simple cylindrical casing.
- Coils are arranged as layers of flat spirals
- It is heated by radiant heat as a water-wall furnace.

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Stone Vapour Generator



Dr. Ruchi Dubey Sharma