

JUNE

12

Tuesday

SCI347 SELECTED TOPICS IN INSTRUMENTAL ANALYSIS

4.8.2020

2018

Week 24

163-202

9

TAUGHT BY

10

- prof. tapan Kumar Sahu

11

12 COURSE TOPICS

1. introduction

- chemical measurements

- instrumental analysis

4

2. elemental analysis

5

- atomic absorption spectroscopy

6

- energy dispersive X-ray spectroscopy

7

3. Spectroscopic chemical speciation

- UV-visible absorption and emission

- infrared (IR)

- Raman scattering

JUN

2018

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2018

Week 24
164201

4.8.2020

2

JUNE

13

Wednesday

• nuclear magnetic resonance (NMR)

• mass spectrometry

4. Separation techniques

• gas chromatography

• high performance liquid chromatography (HPLC)

• capillary electrophoresis

5. electroanalytical analysis

• cyclic voltammetry (CV)

6. thermal analysis

• thermogravimetry (TGA)

• differential scanning calorimetry (DSC)

7. Surface analysis

• BET surface area analysis

JUL
2018

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JULY

AUGUST

JUNE

14

Thursday

4.8.2020

3

2018

Week 24

165-200

• X-ray photoelectron spectroscopy (XPS)
or electron spectroscopy for chemical
analysis (ESCA)

• atomic force microscopy (AFM)

• scanning electron microscopy (SEM)

TEXTBOOKS

1. instrumental methods of analysis; sivasankar. (2012)

2. handbook of analytical instruments; Khandpur. (2006)

3. principles of instrumental analysis; Skoog.

4. instrumental methods of analysis; Willard.

5. introduction to instrumental analysis; Braun.

6. instrumental methods of chemical analysis; Galen.