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 : INDUSTRIAL PHARMACY I (BP 503 T)

V SEM / III YEAR

TOPIC 1 : PREFORMULATION STUDIES

SUB TOPIC: Introduction, Objectives, Physical Properties

Preformulation

Physicochemical Characterization

Analyzing properties of the drug

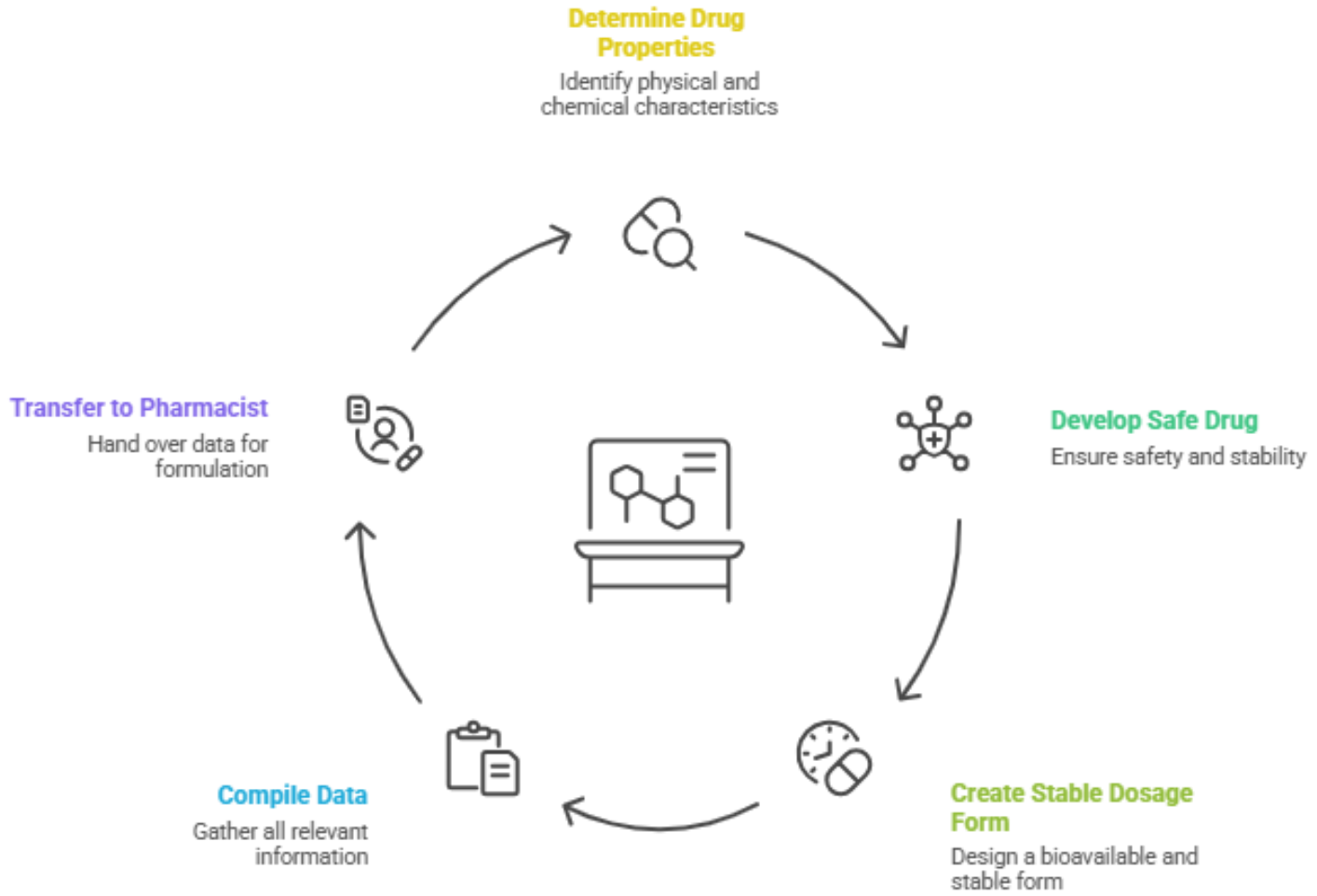
Dosage Form Development

Creating a stable and effective form

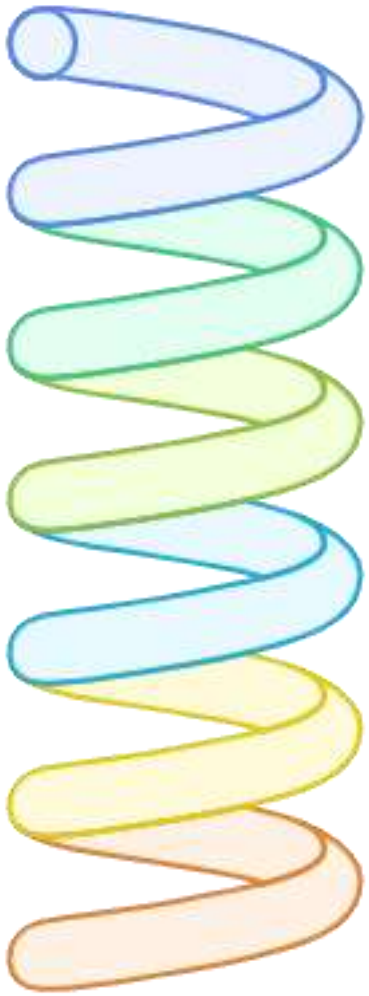
Excipient Interaction Studies

Evaluating drug-excipient compatibility

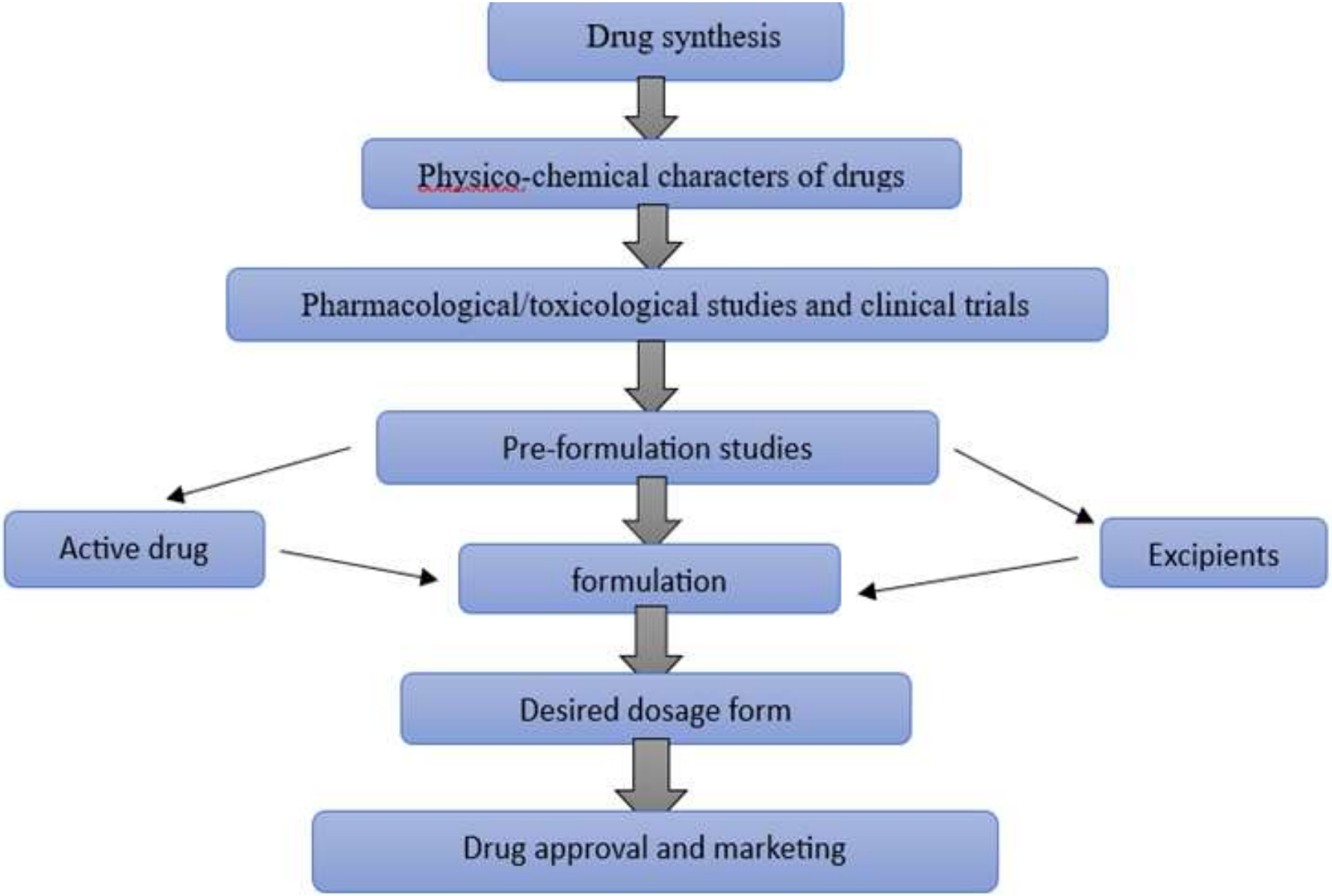
Pre-formulation



Pre-formulation Objectives



- Establish Physico-chemical Parameters
- Determine Kinetics and Stability
- Establish Compatibility with Excipients
- Provide Insights into Processing and Storage
- Estimate Potential Formulation Problems
- Develop Optimal Drug Delivery System


Drug synthesis
Physico-chemical characters of drugs
Pharmacological/toxicological studies and clinical trials
Pre-formulation studies
Active drug
Excipients
formulation
Desired dosage form
Drug approval and marketing

Pre-formulation Study Goals

Establish Physico-chemical Parameters

Determine the physical and chemical properties of the drug molecule

Determine Kinetic Rate Profile

Analyze the rate at which the drug substance reacts

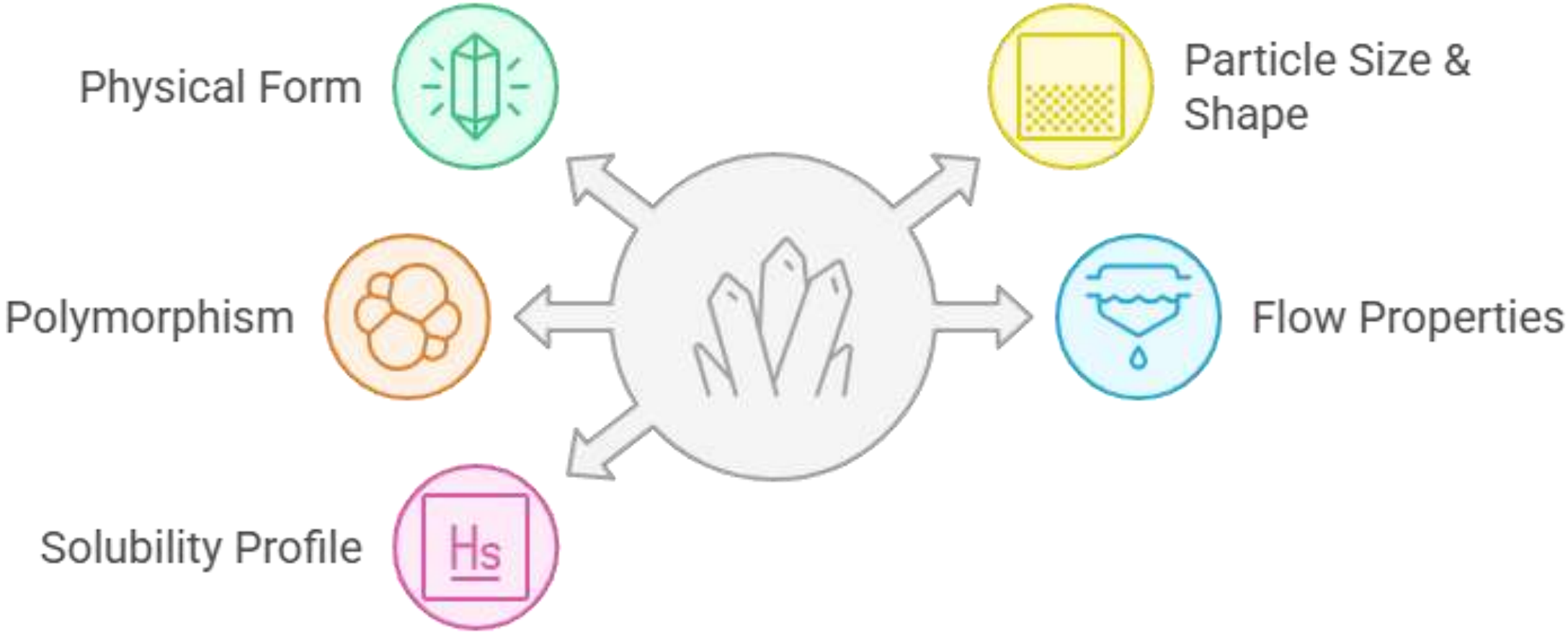
Establish Compatibility with Excipients

Assess how well the drug molecule interacts with common excipients

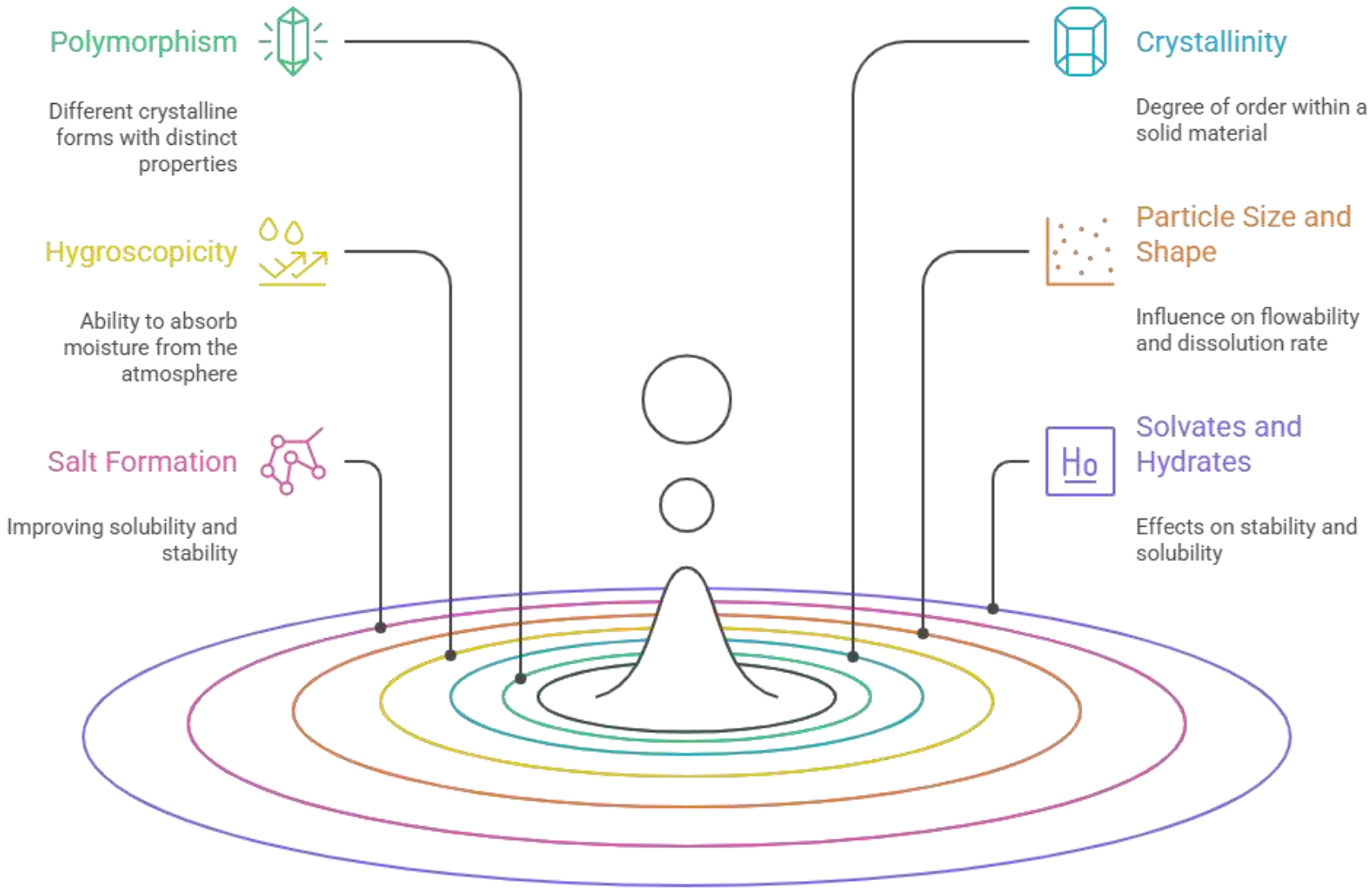
Choose Correct Form of Drug Substance

Select the most suitable form of the drug substance for formulation

Physical Properties

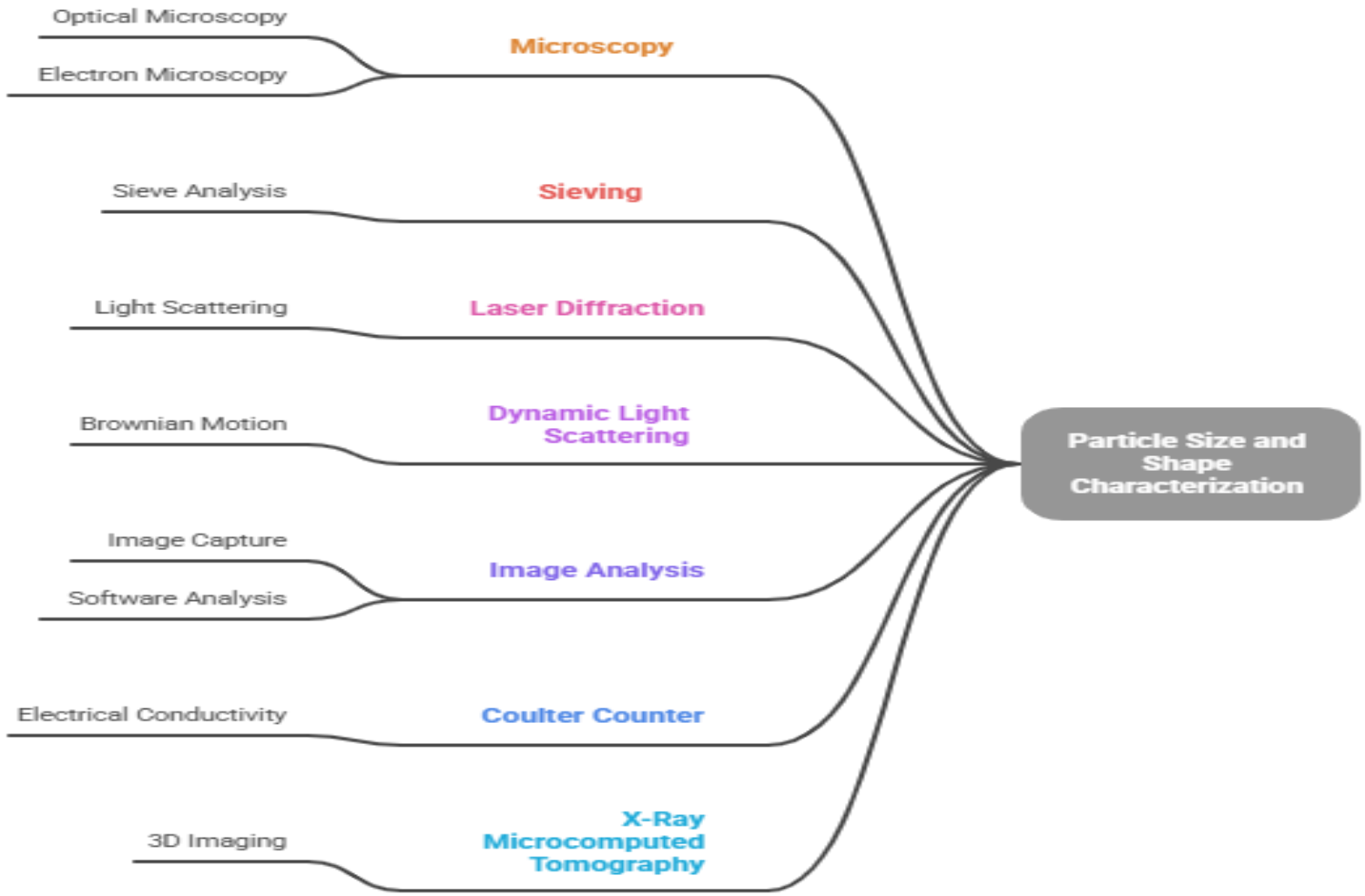


Physical Form Characterization



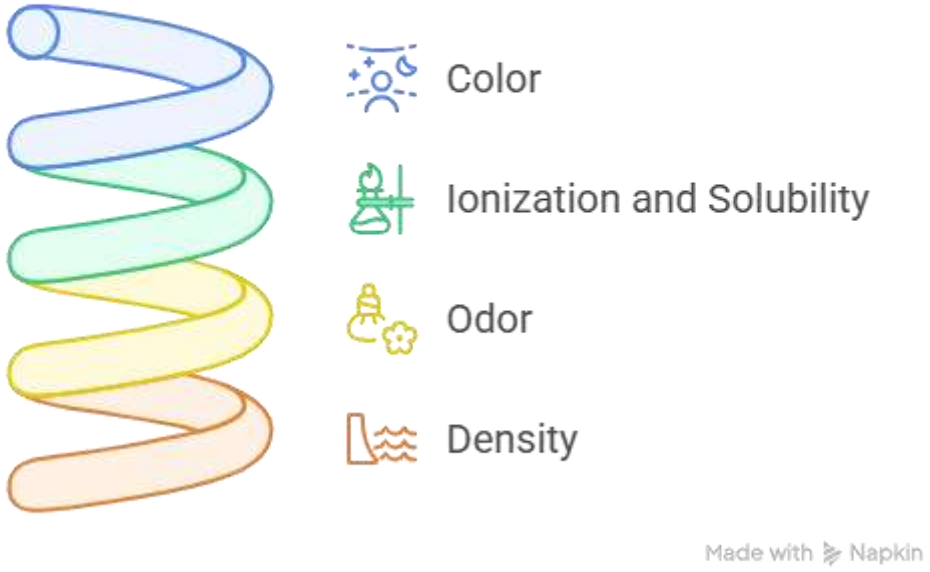
Particle Size

Techniques for Particle Size and Shape Characterization



ASSESMENTS

1.pKa of a drug helps in determining its:



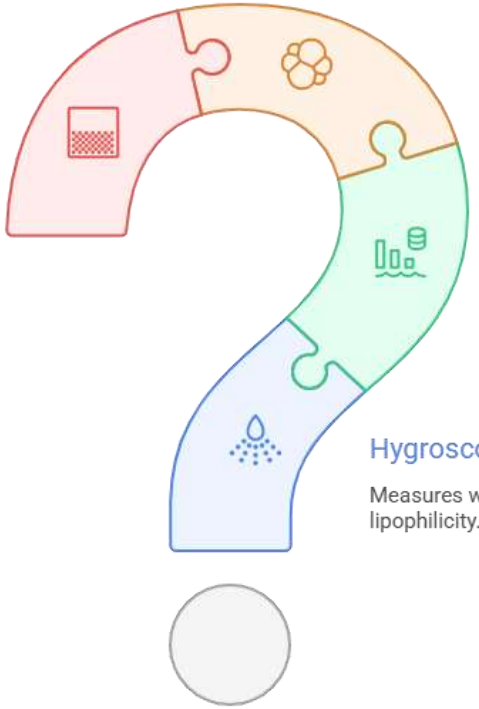
Which chemical property indicates lipophilicity?

Polymorphism

Relates to crystal structure, not lipophilicity.

Particle size

Affects dissolution rate, not lipophilicity.



Partition coefficient (Log P)

Quantifies lipophilicity by measuring distribution between water and oil.

Hygroscopicity

Measures water absorption, not lipophilicity.

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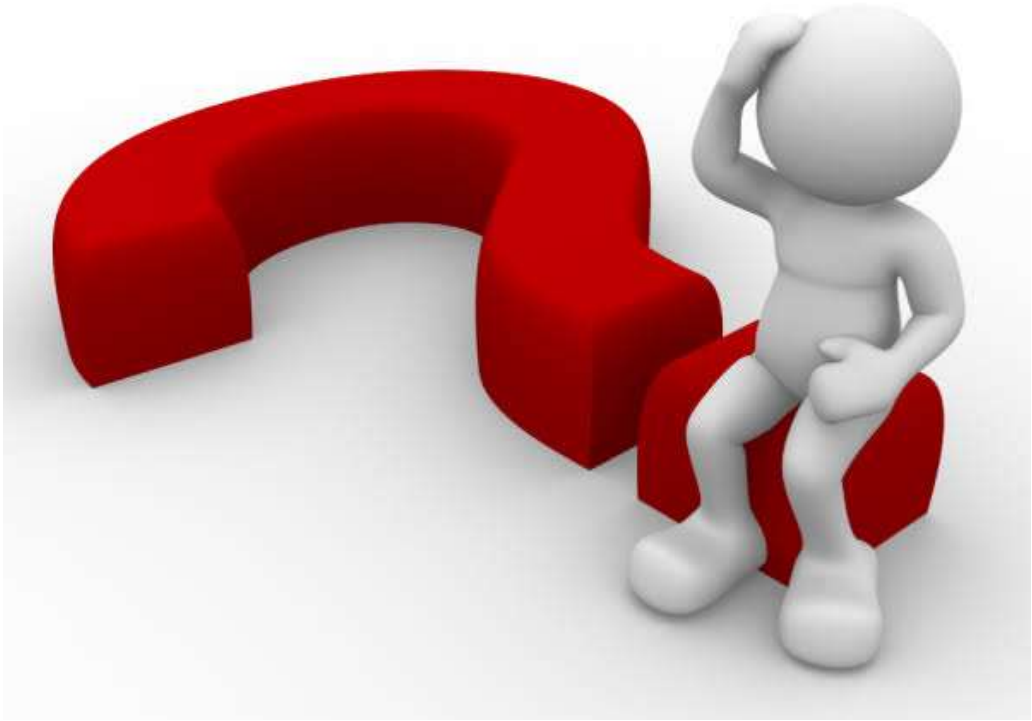
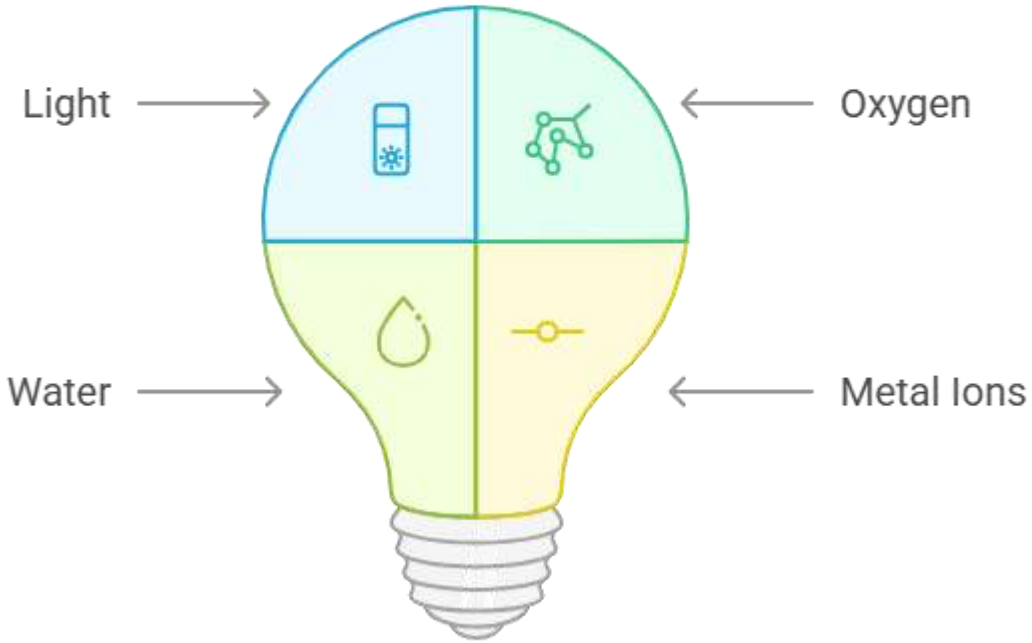


Hydrolysis is the degradation of drugs in the presence of



Oxidation of Drugs can be prevented by using

Surfactants

Surfactants can help prevent drug oxidation.

Antioxidants

Antioxidants are effective in preventing drug oxidation.

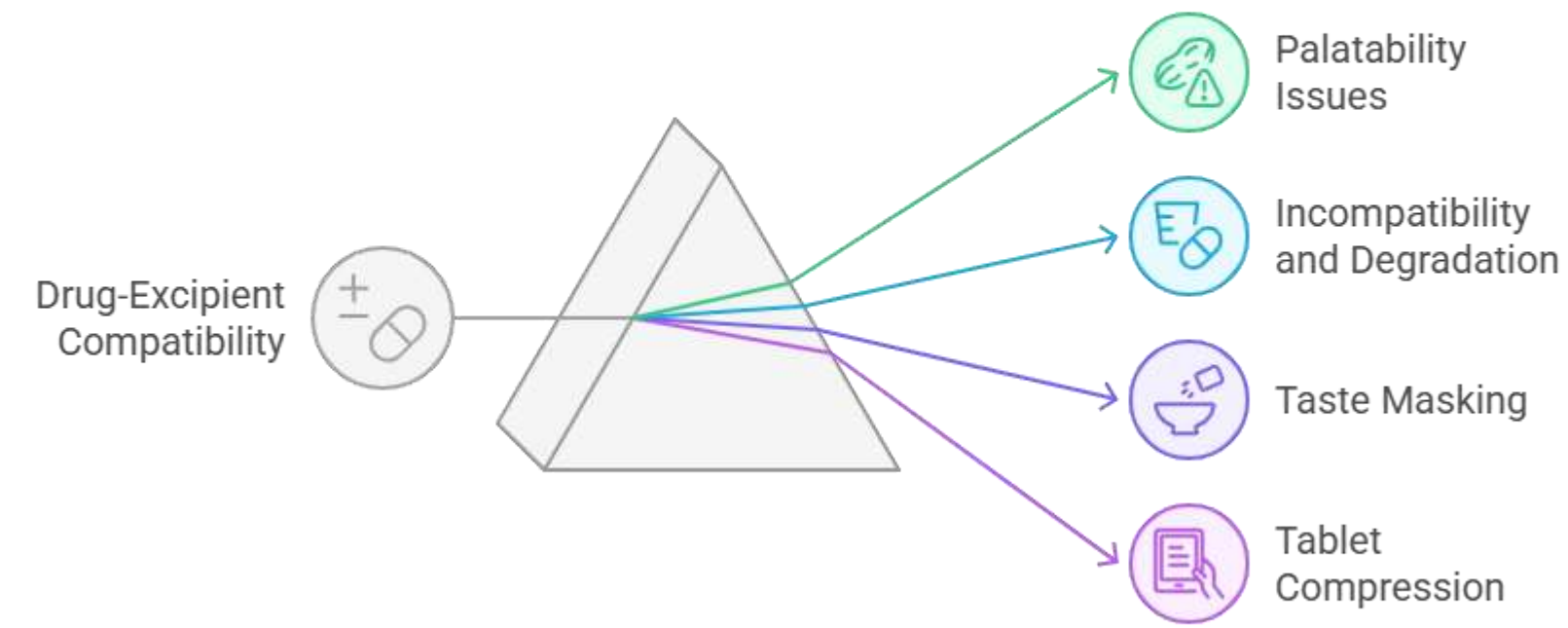
Disintegrants

Disintegrants assist in breaking down drugs, but don't prevent oxidation.

Lubricants

Lubricants reduce friction, but do not prevent drug oxidation.

Studying Drug-Excipient Compatibility is important to avoid



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REFERENCES

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- Dr. Tipnis H.P. and Dr. Bajaj Amrita, Principles and applications of B 1st iopharmaceutics and Pharmacokinetics, edition 2002, reprint 2005, career publication, Page no. 332-340.
- Leon shargel, Susanna wu-pong, Andrew B.C.Yu , Applied Biopharmaceutics & Pharmacokinetics, 5 th edition 2005, published by the Mc Graw hills companies, page no. 431-436 & 482-484.


Thank You