

SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES



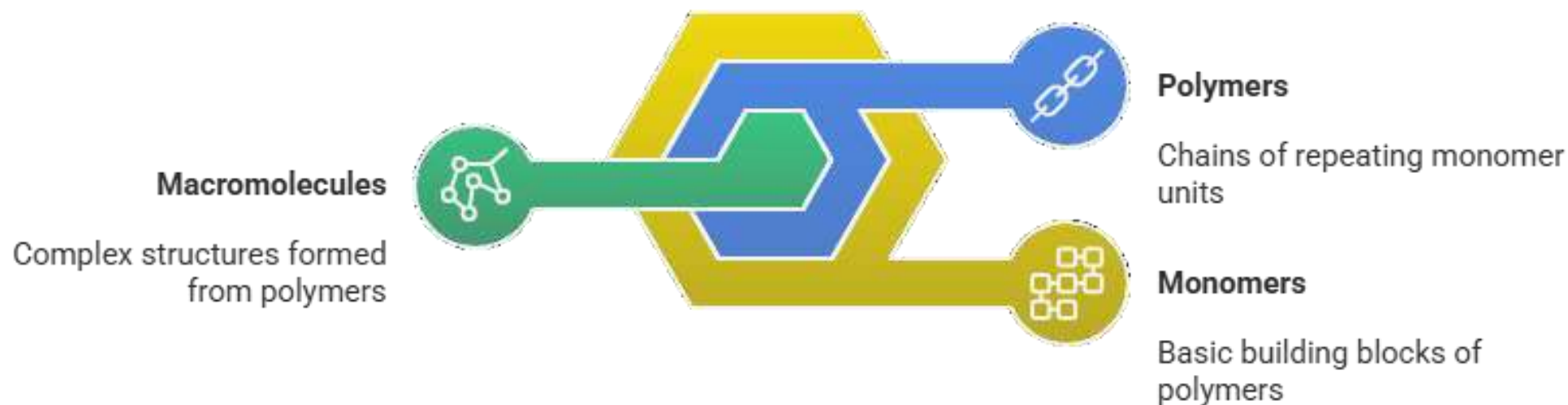
Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai
Approved by Pharmacy Council of India, New Delhi.
Coimbatore -641035

COURSE NAME : NOVEL DRUG DELIVERY SYSTEM (BP 706 T)

VII SEM / IV YEAR

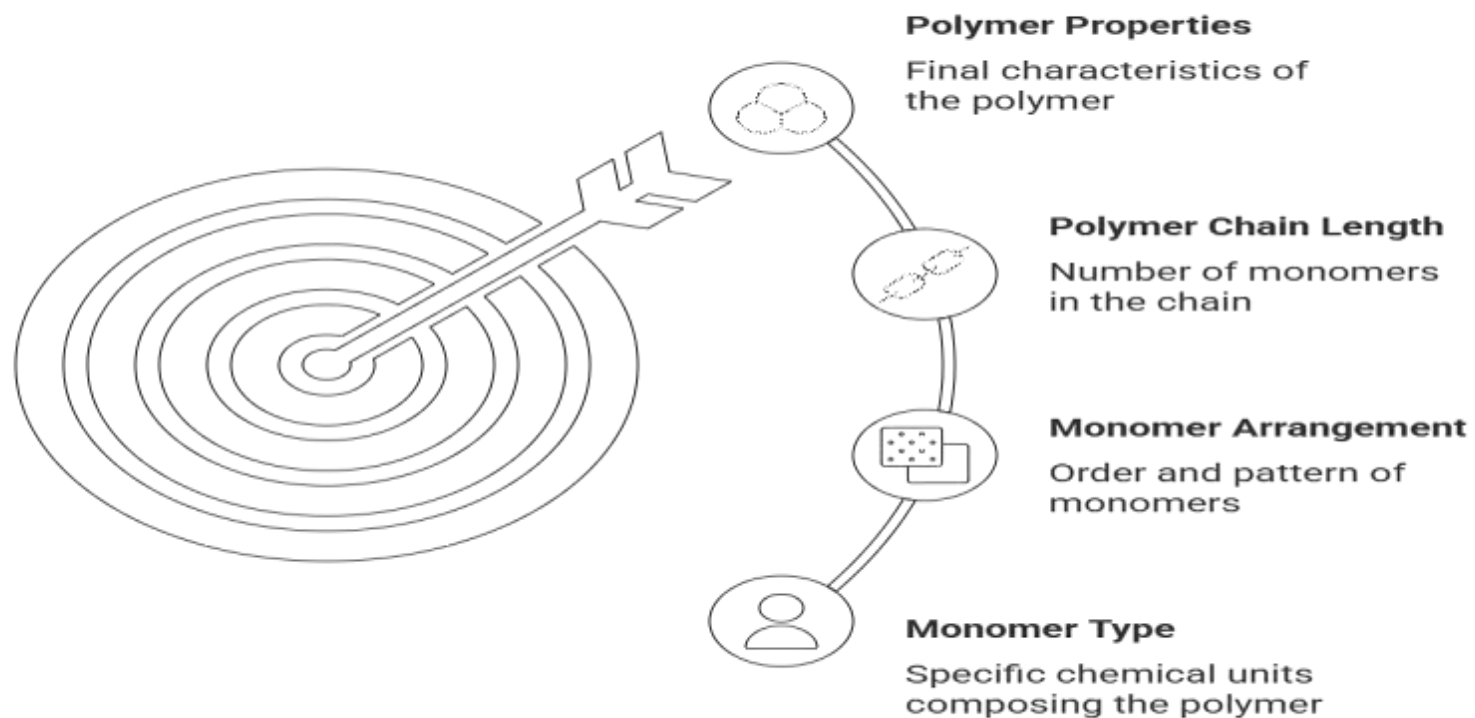
TOPIC 1 :POLYMERS

Polymer and Monomers

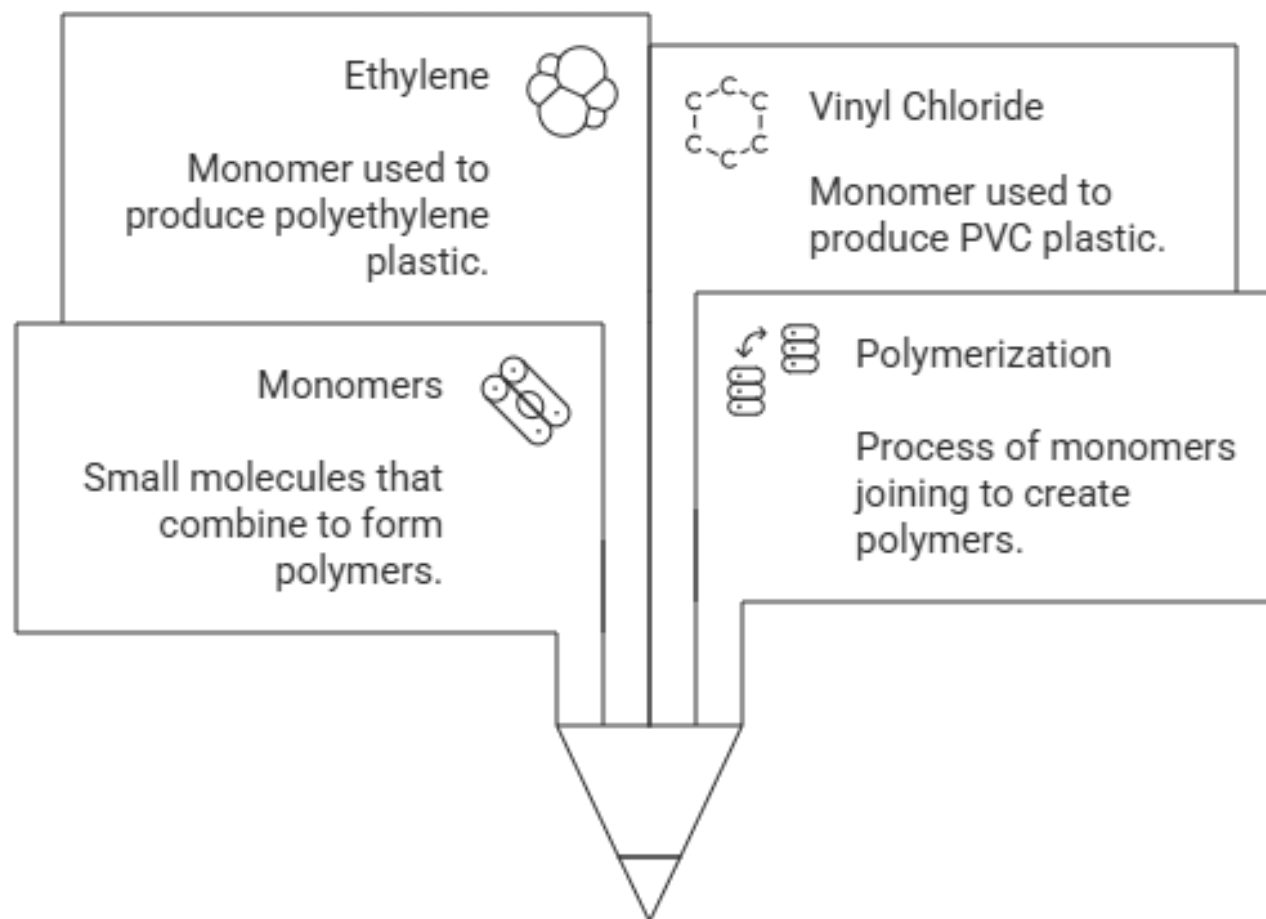


Made with  Napkin

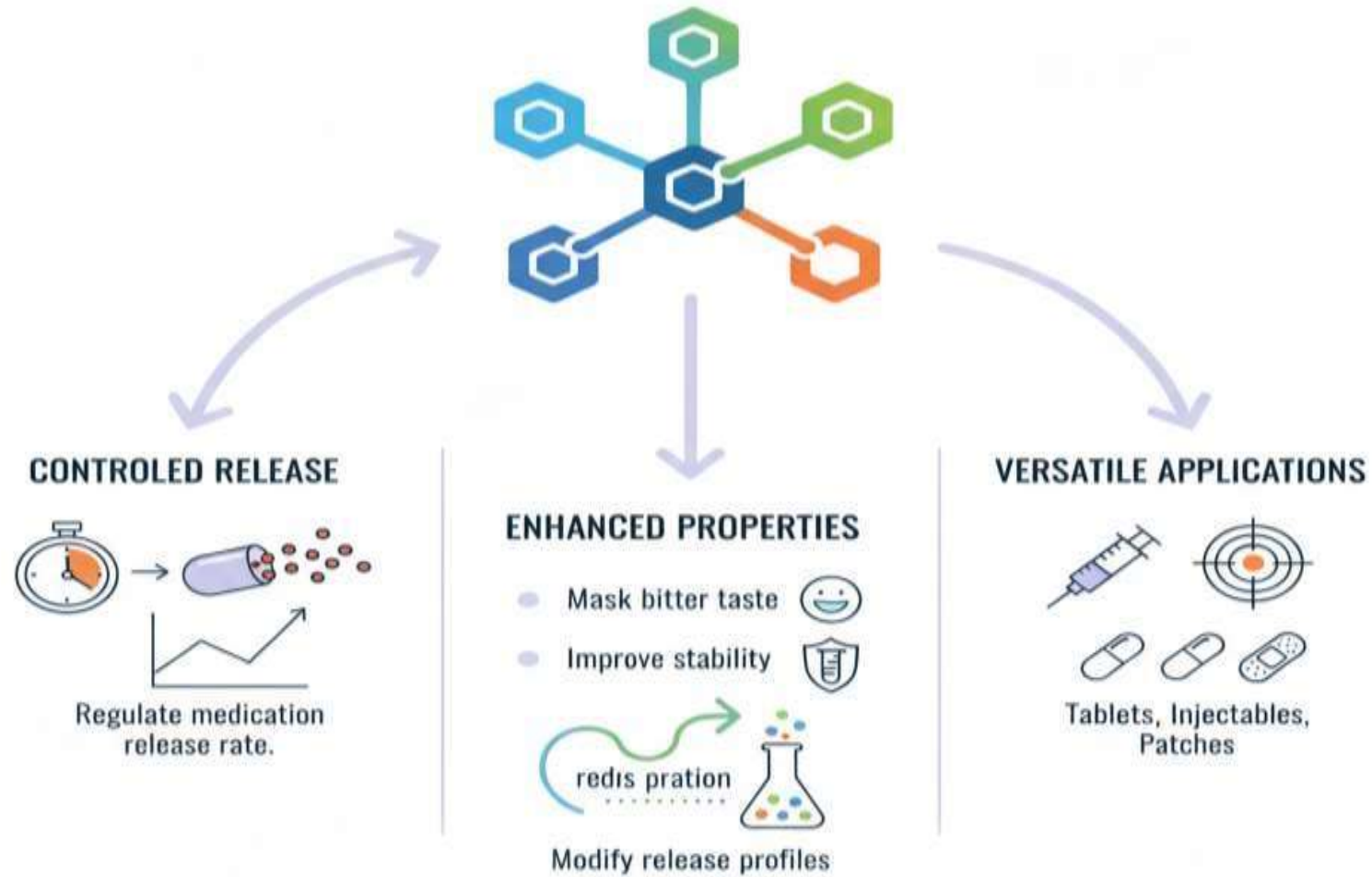
Polymer Structure and Properties

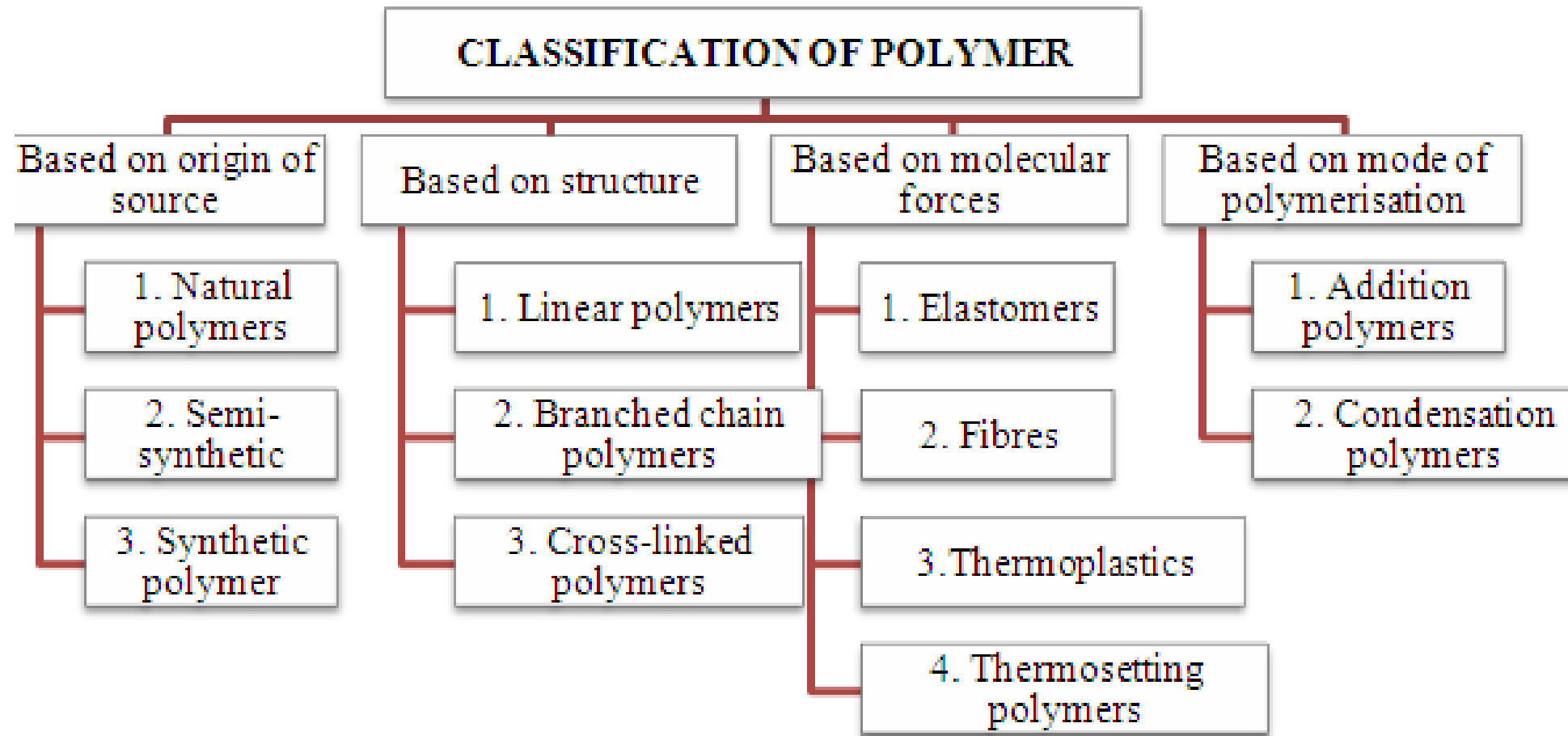


Made with  Napkin

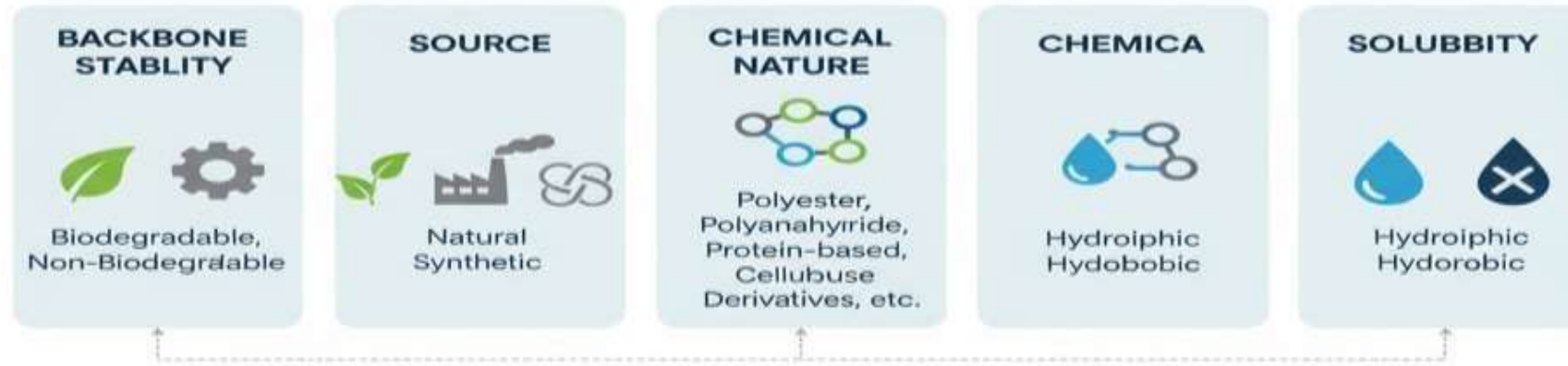


Made with  Napkin



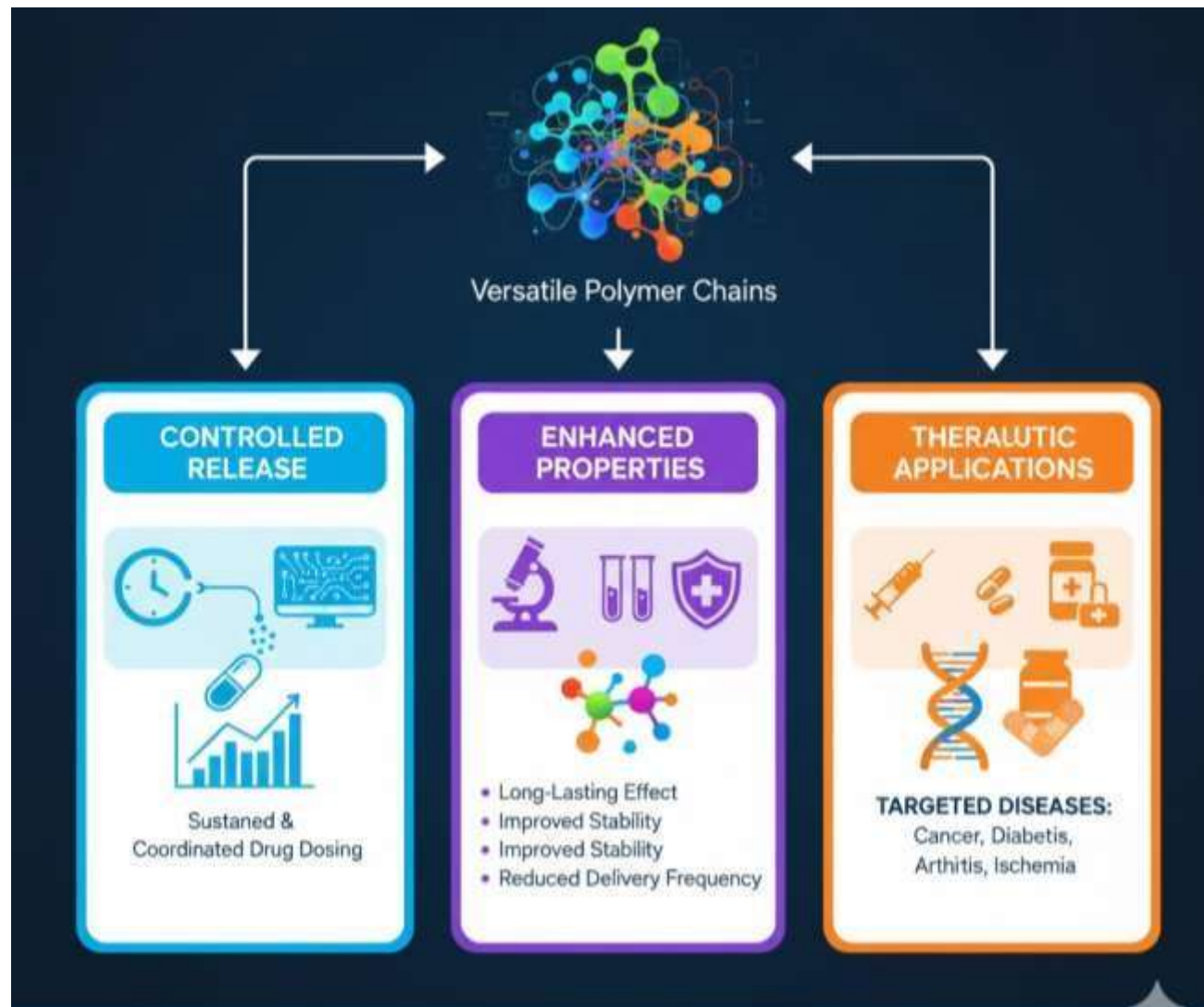


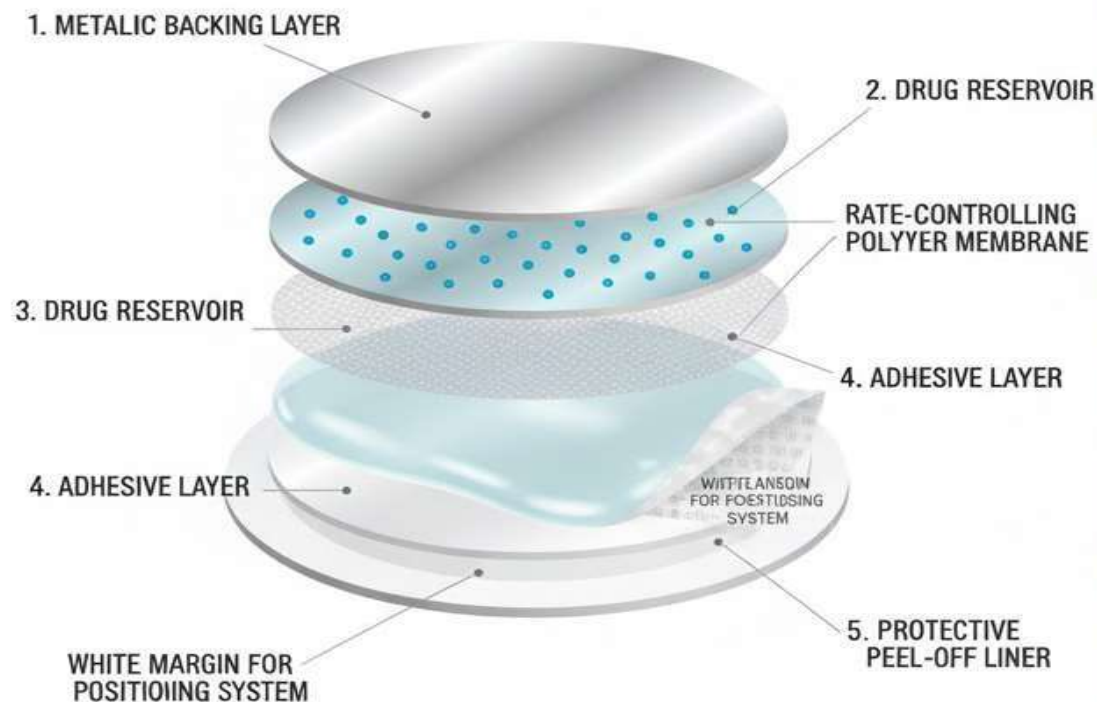
CLASSIFICATION PROPERTIES



KEY CONSTRAINTS

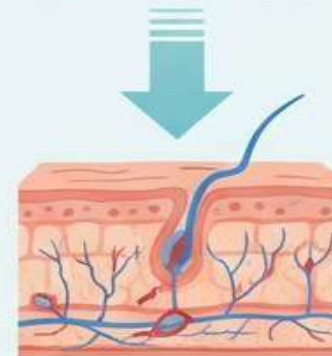






HOW IT WORKS:

1. Drug diffuses through skin.
2. Absorbed into systemic circulation.



KEY COMPONENTS:

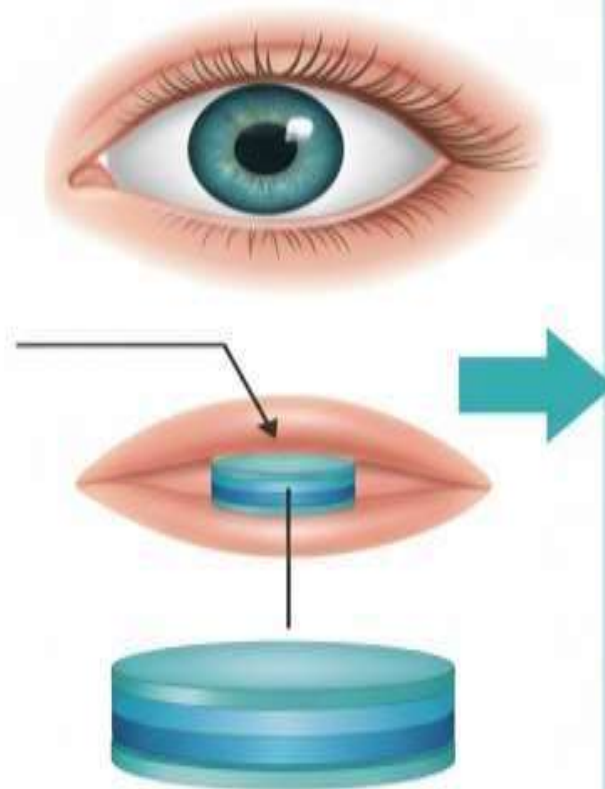
- **Metallic Backing:** Prevents drug loss. medication.
- **Drug Reservoir:** Contains medication.
- **Adhesive Layer:** Secures patch, drug in solid polymeric polymer matrix (e.g., acrylic copolymer).

THE CHALLENGE



Conventional eye drops & ointments are inefficient for treating eye problems (e.g., Glaucoma).

THE INNOVATION

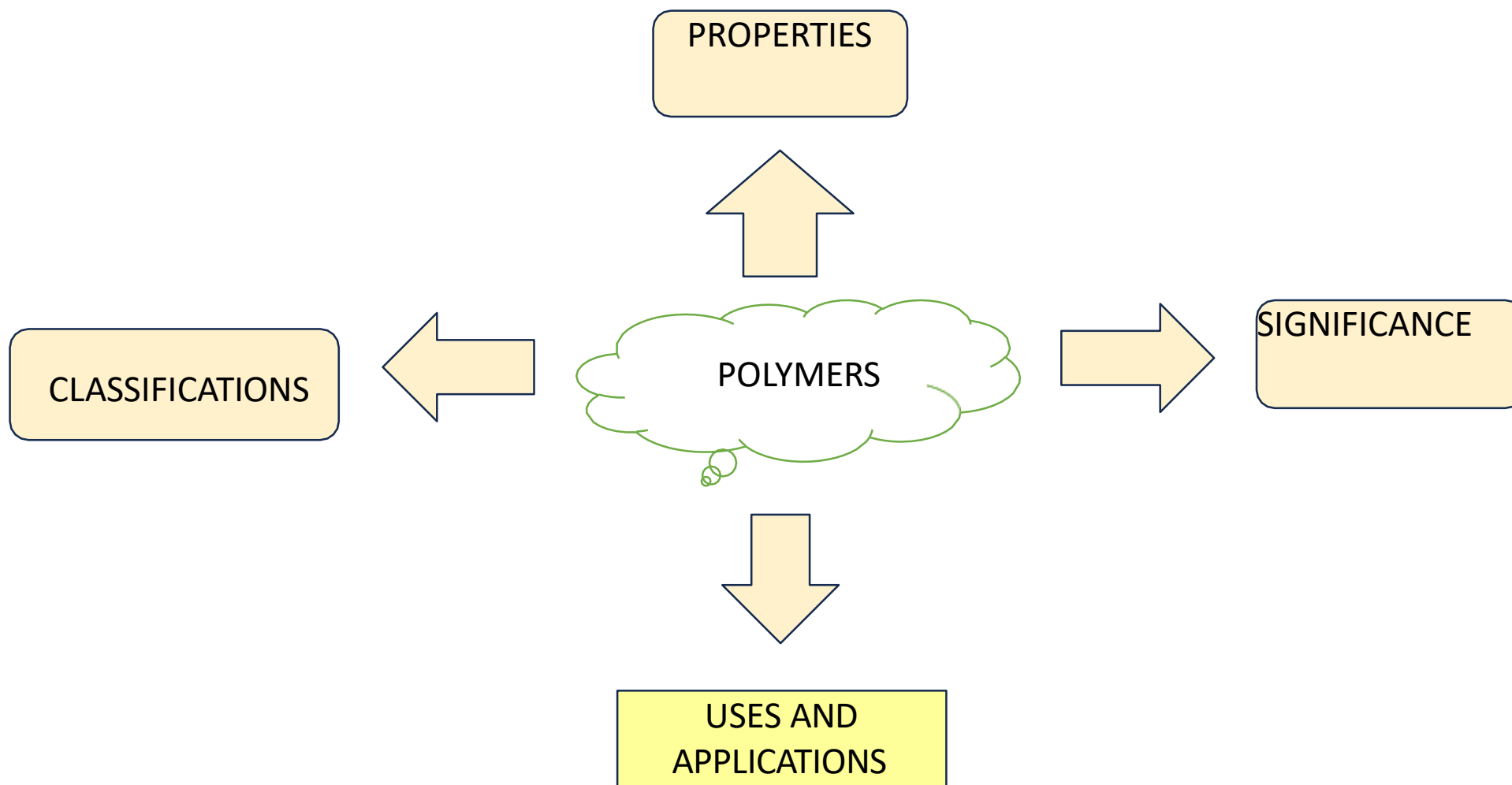


Pilocarpine drug
in Alginic Acid Matrix
(EVA) Polymer Layers

THE ADVANTAGE



Polymeric implant improves efficiency, provides sustained drug release and enhanced therapeutic effect



1. What is a polymer, as described in the "Introduction" or "Building Polymers from Monomers" section of the presentation



What is a Polymer?



What is a polymer?

A large molecule composed of repeating monomer units.

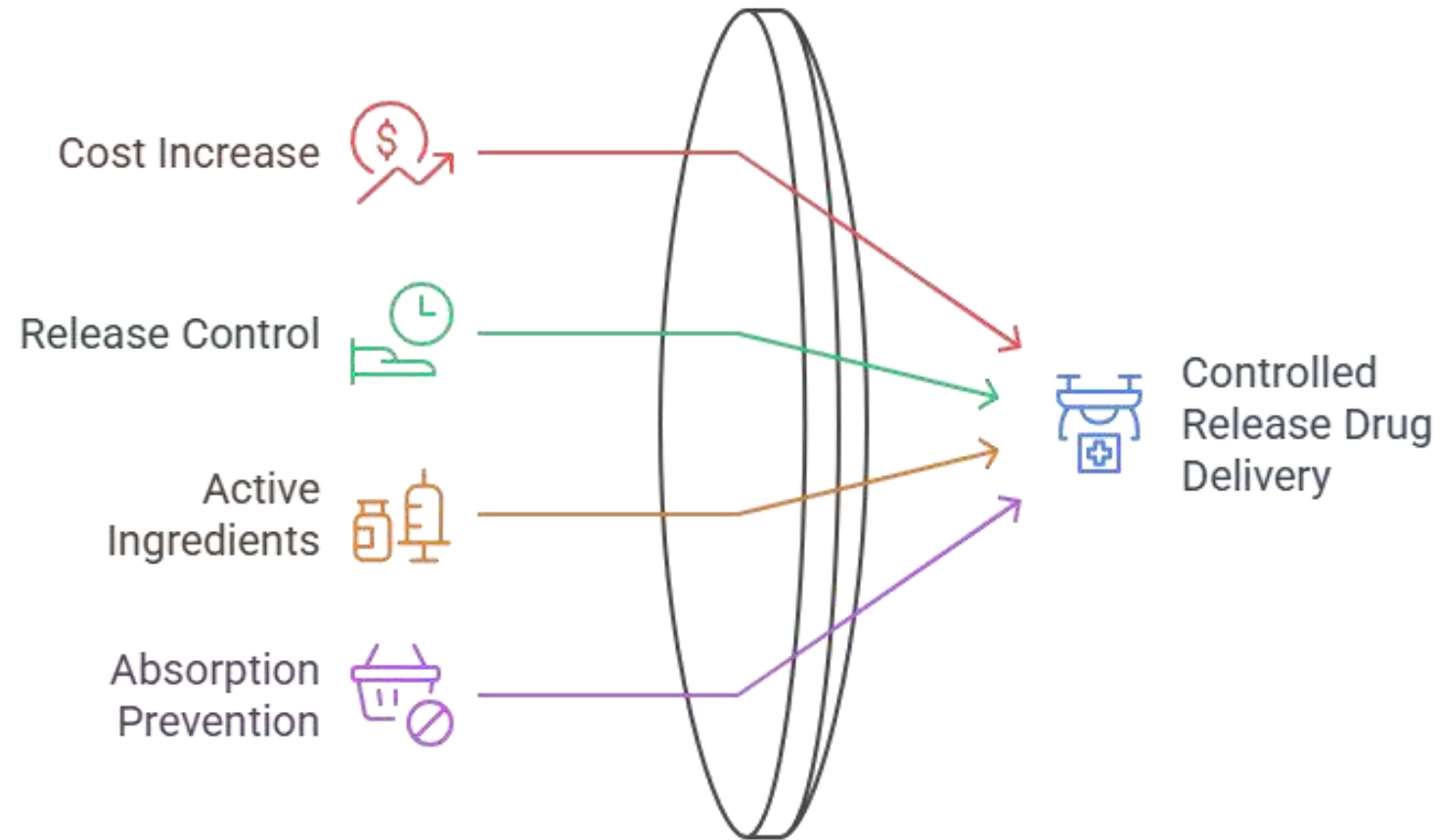


Made with  Napkin

2. Why are polymers significant in Controlled Release Drug Delivery Systems (CRDDS)?



Polymers in controlled release



Made with  Napkin

Which property of polymers is critical for ensuring biocompatibility in CRDDS, as discussed in the "Properties of Polymers" section?



Key Polymer Property for Biocompatibility

High Tensile Strength

Offers structural integrity for device function

Electrical Conductivity

Not typically relevant for biocompatibility



Biodegradability

Ensures polymers break down safely in the body

High Melting Point

Provides stability at body temperature

Made with  Napkin

REFERENCES

1. Yie W. Chien: Novel Drug Delivery Systems, Second Edition, Marcel Dekker, Inc, 1992 Pg no.816.
2. Joseph R. Robinson: Sustained and Controlled Release Drug Delivery Systems, First edition, Volume 6, Marcel Dekker, Inc,1986,pg.618.
3. <https://www.sciencedirect.com/journal/journal-of-controlled-release>
4. <https://www.tandfonline.com/doi/full/10.1080/10837450.2018.1534376>
5. <https://www.scribd.com/document/668313752/Controlled-and-Novel-Drug-Delivery-by-N-K-Jain-1st-Editn-Reprint>



THANK YOU