

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

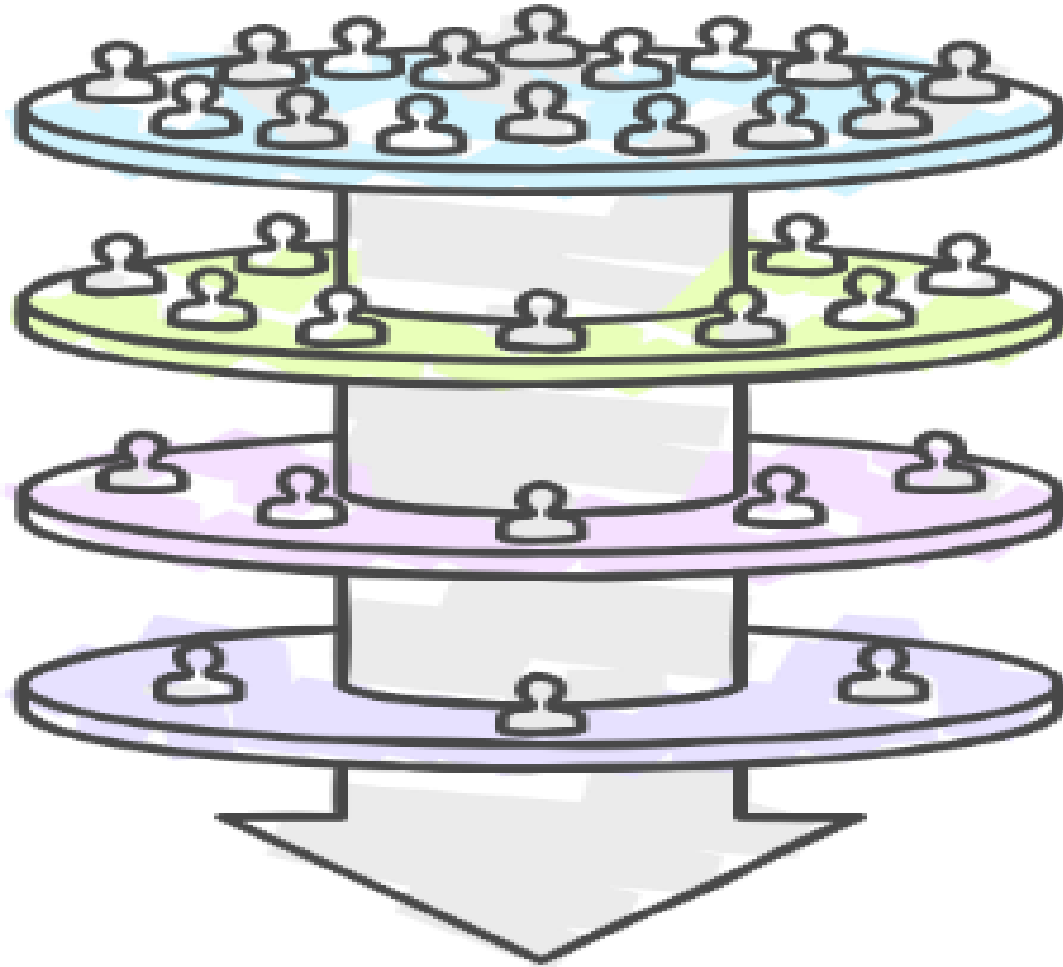
COURSE NAME : PHARMACEUTICAL ENGINEERING (BP 304 T)

III SEM / II YEAR

UNIT -2

TOPIC 2 :SIZE REDUCTION

Size Reduction Process Funnel



 Method Selection

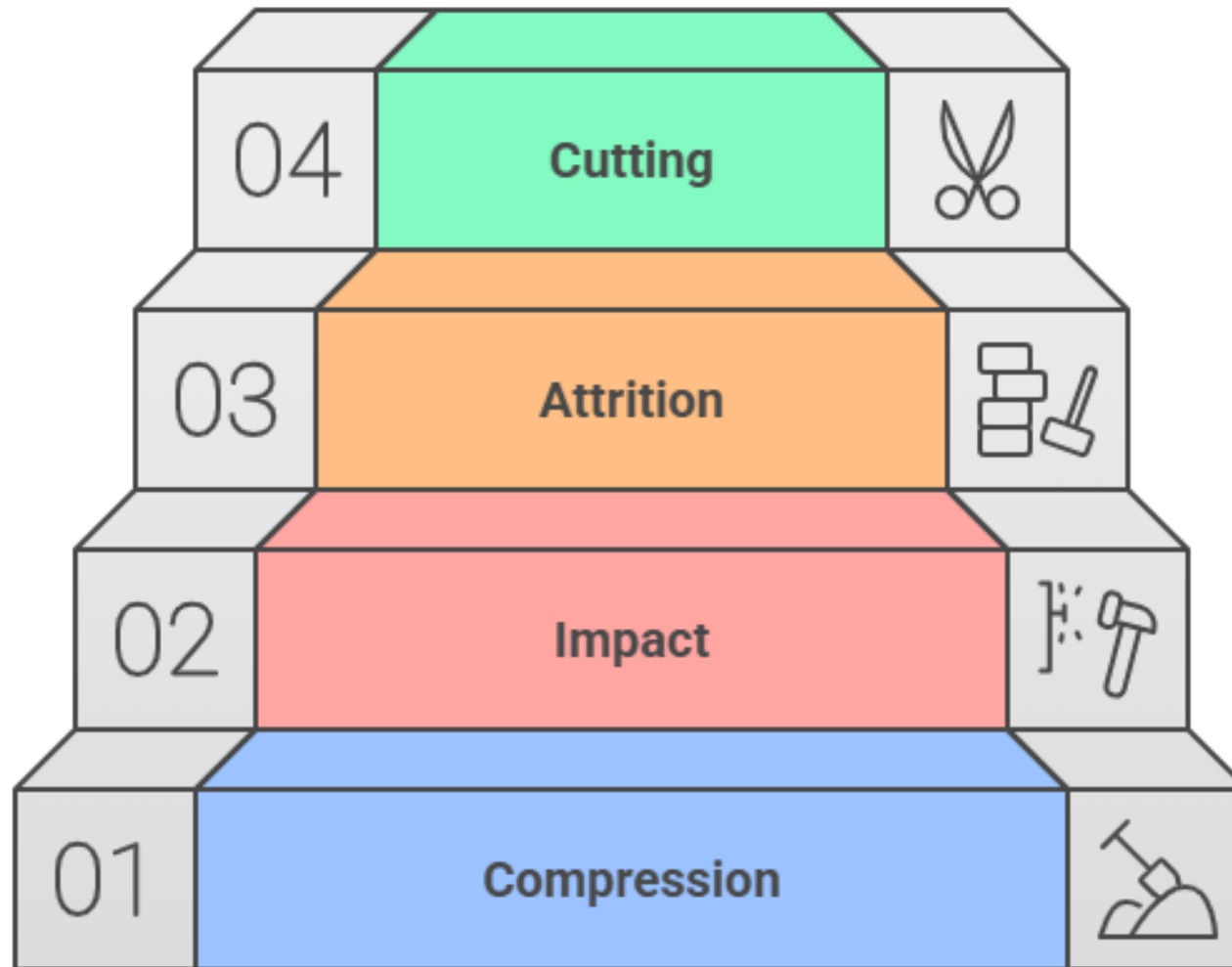
 Equipment Use

 Factor Influence

 Application

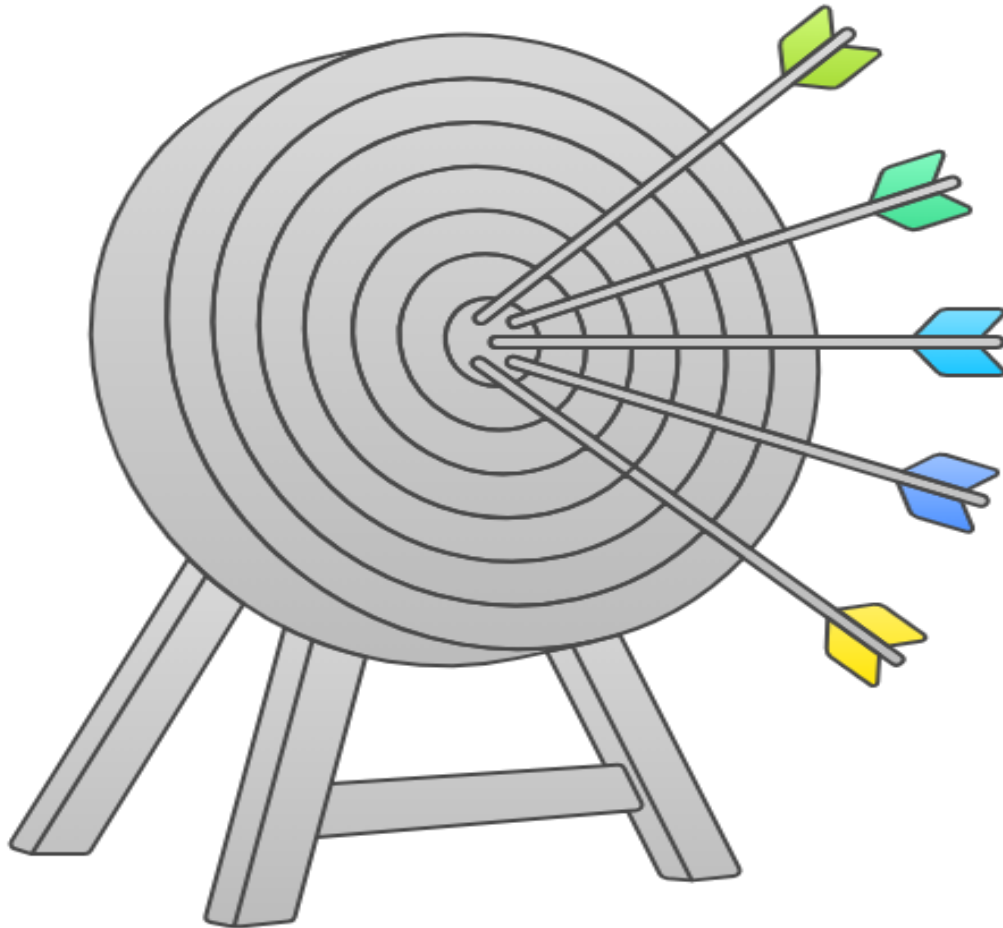
Made with  Nepkin

Achieving Effective Size Reduction



Made with  Napkin

Size Reduction Method Selection



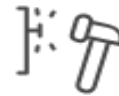
Desired Particle Size

The ultimate goal of size reduction



Material Properties

Characteristics affecting reduction process



Hardness

Resistance to deformation



Abrasiveness

Tendency to cause wear



Moisture Content

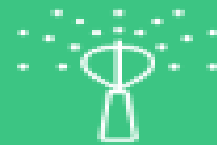
Water presence affecting process

Which size reduction method should be used for a specific material?



Crushing

Ideal for coarse reduction of hard, abrasive materials with high throughput.



Grinding

Suitable for finer particle production using various mechanisms.



Cutting

Best for fibrous or ductile materials using sharp blades.

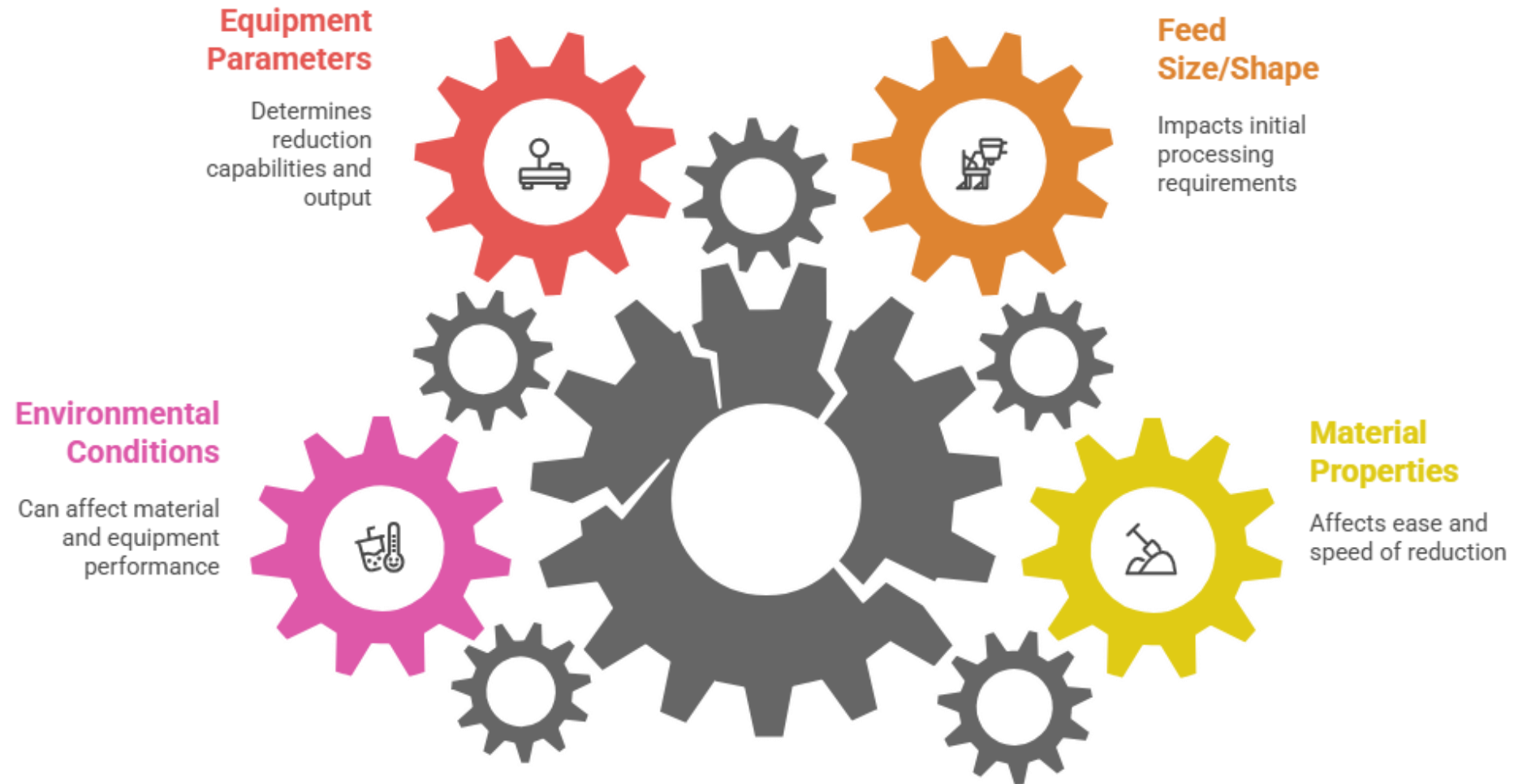


Ultrafine Grinding

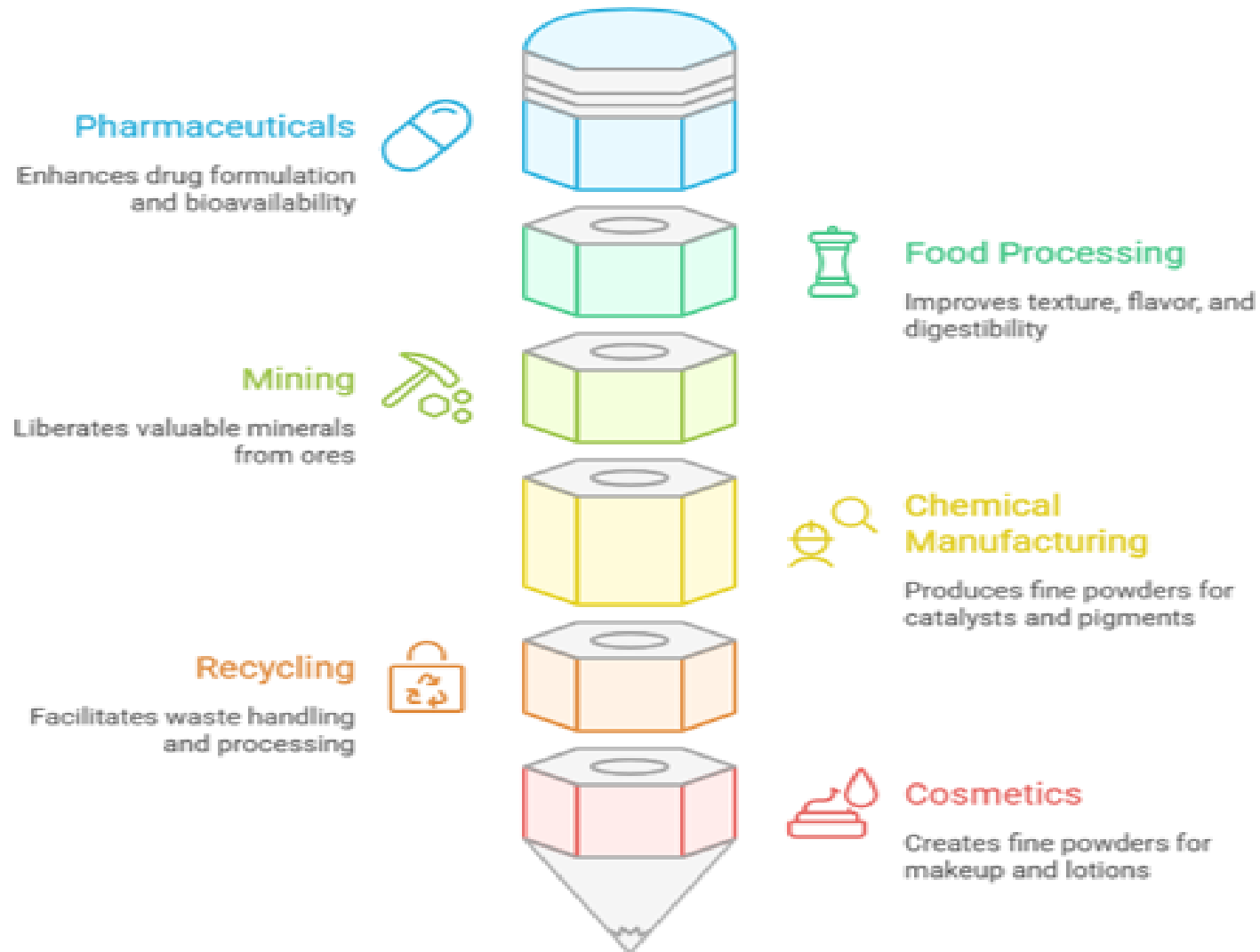
Produces extremely fine particles using specialized methods.



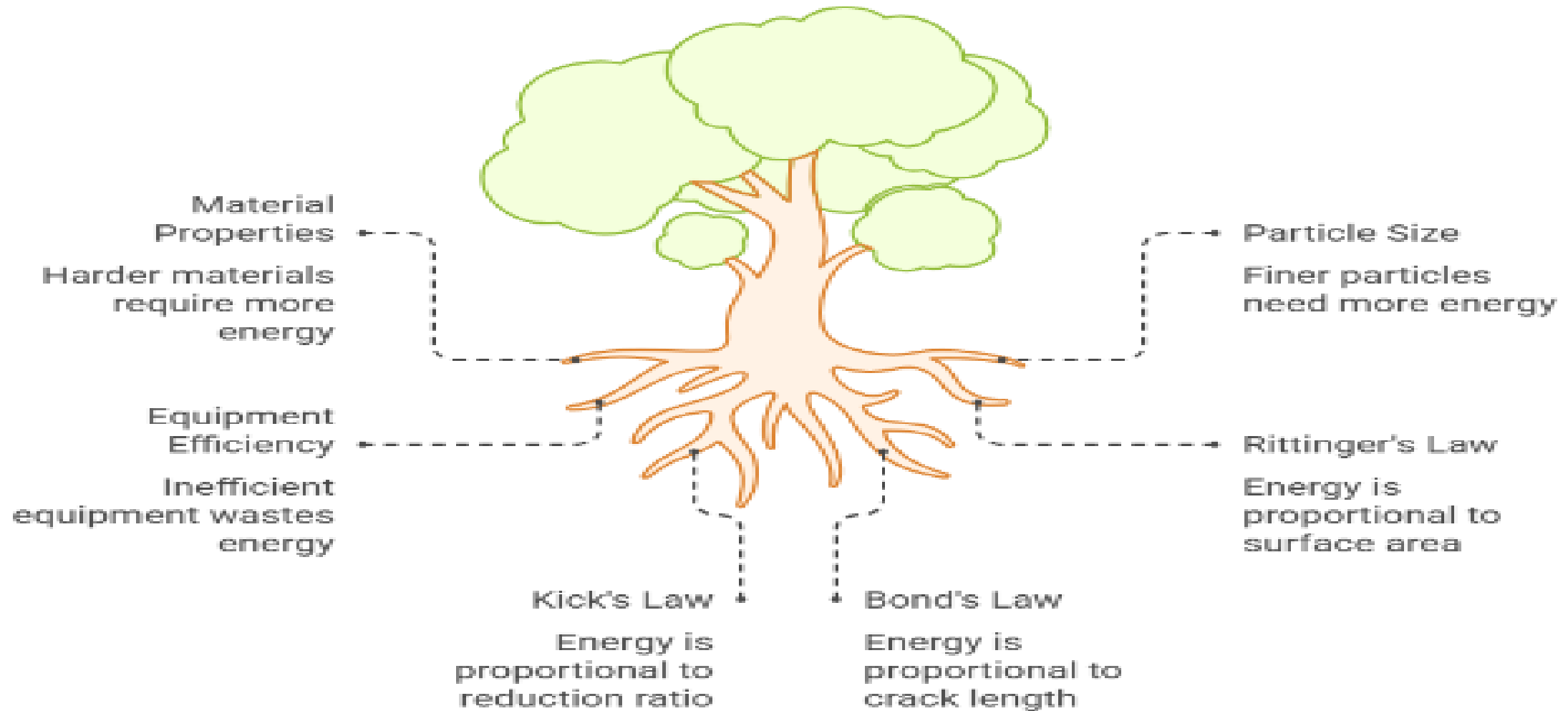
Inefficient Size Reduction Process



Diverse Applications of Size Reduction



High Energy Consumption in Size Reduction



Made with Napkin

Principles

Methods

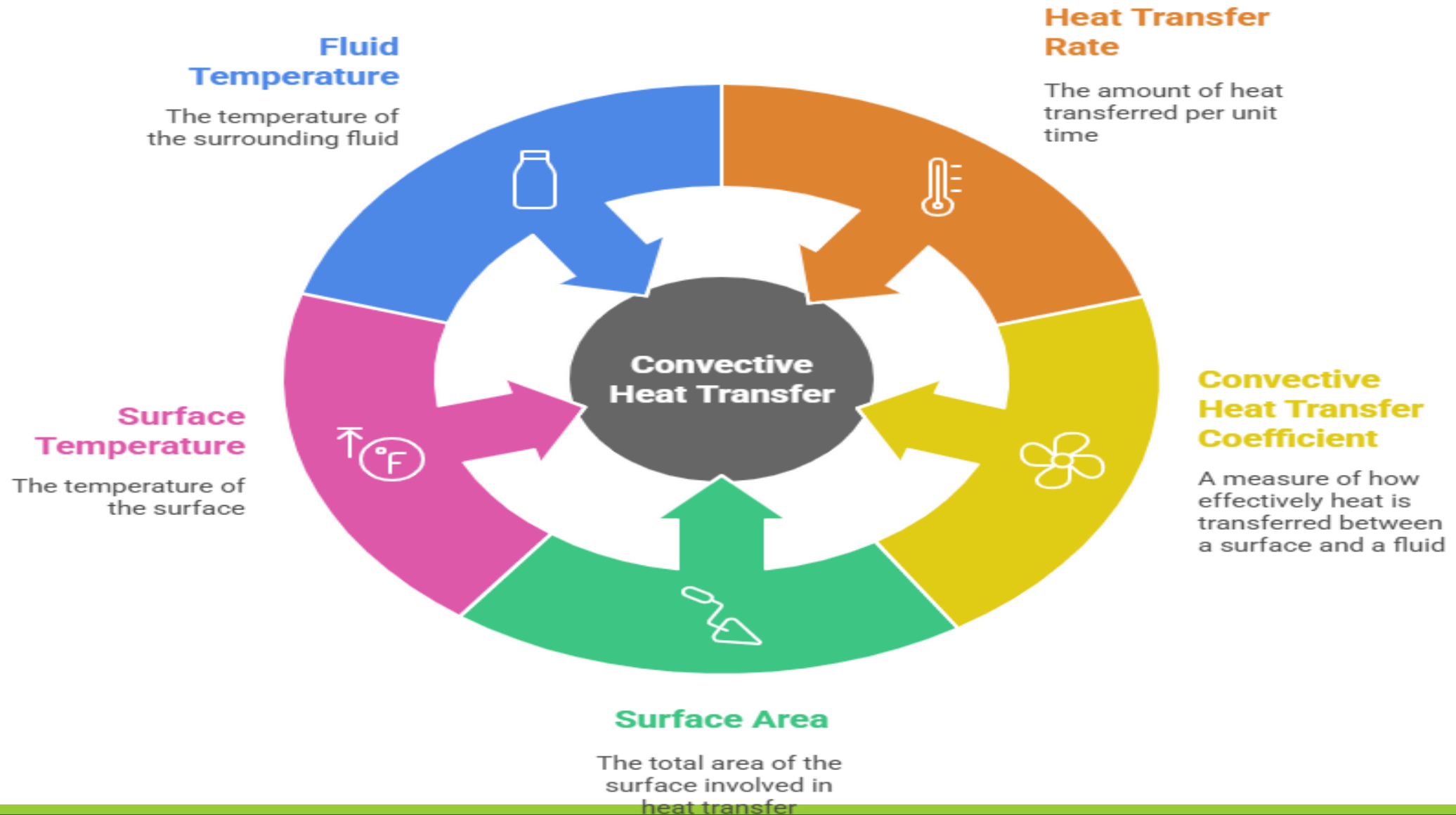
Factors

Applications

Technology




Factors Influencing Convective Heat Transfer



List factors affecting size reduction

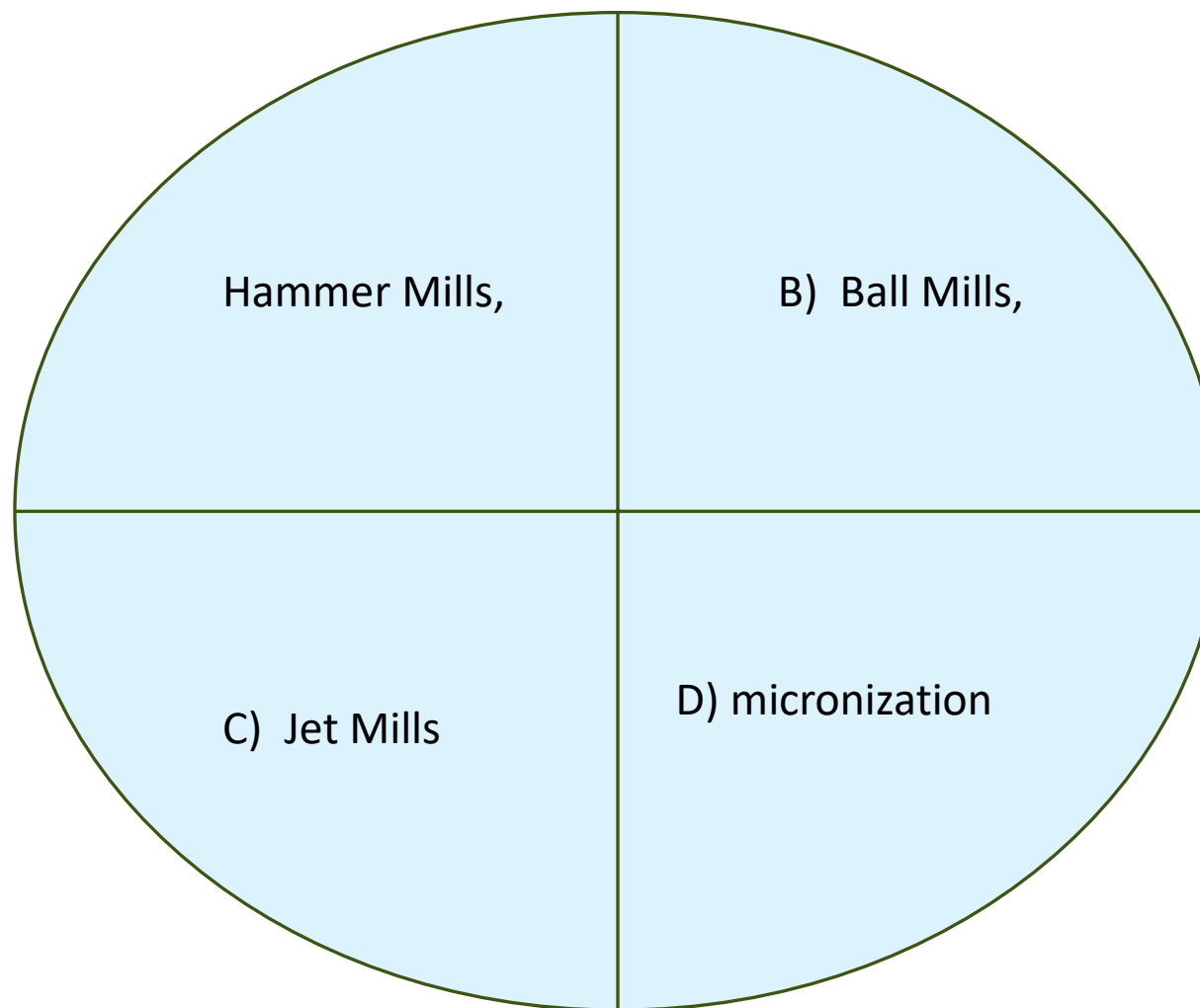




hardness
toughness
stickiness
moisture content

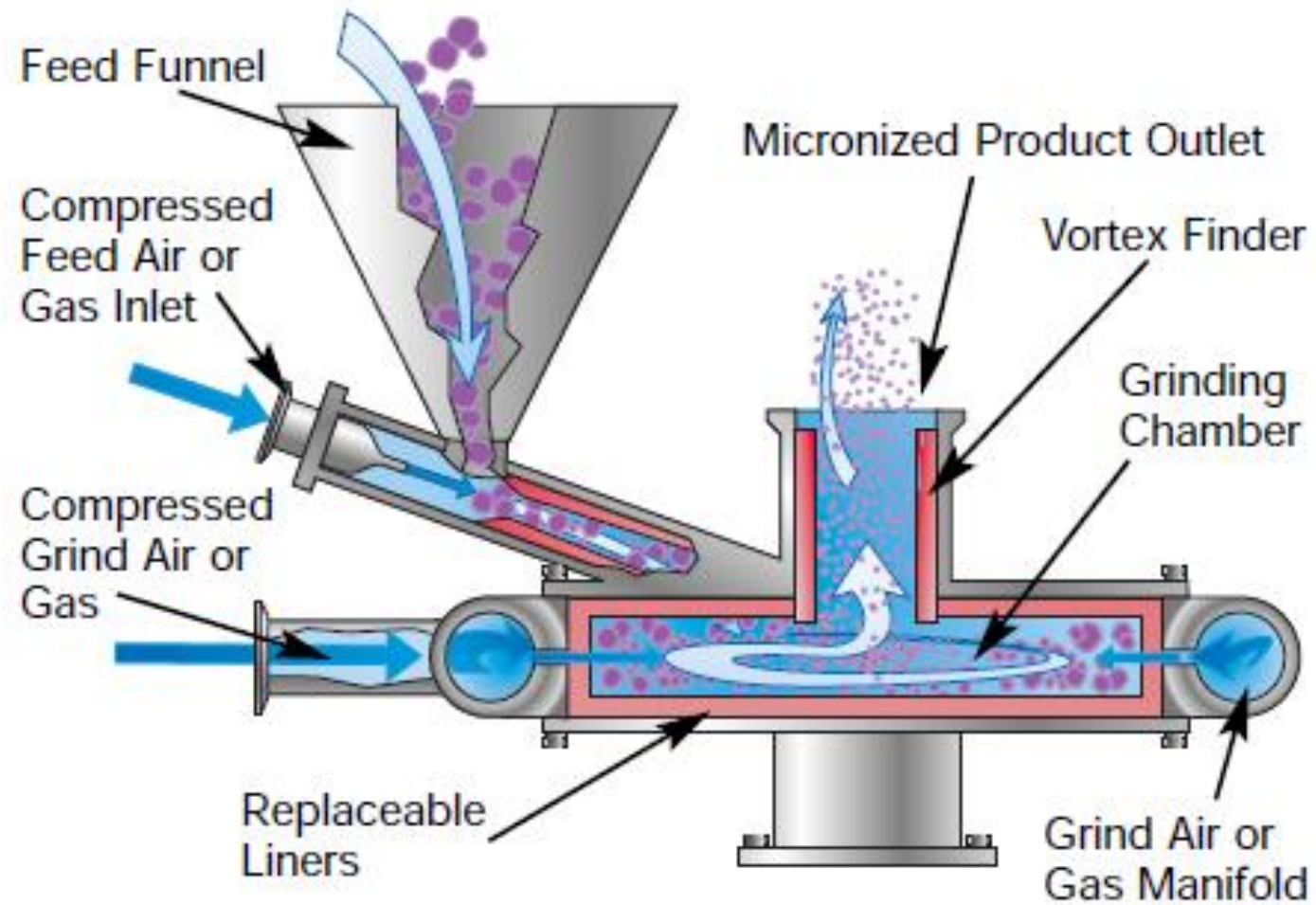
2 .Name different types of grinding equipment.





Name equipment used for ultrafine grinding.





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