

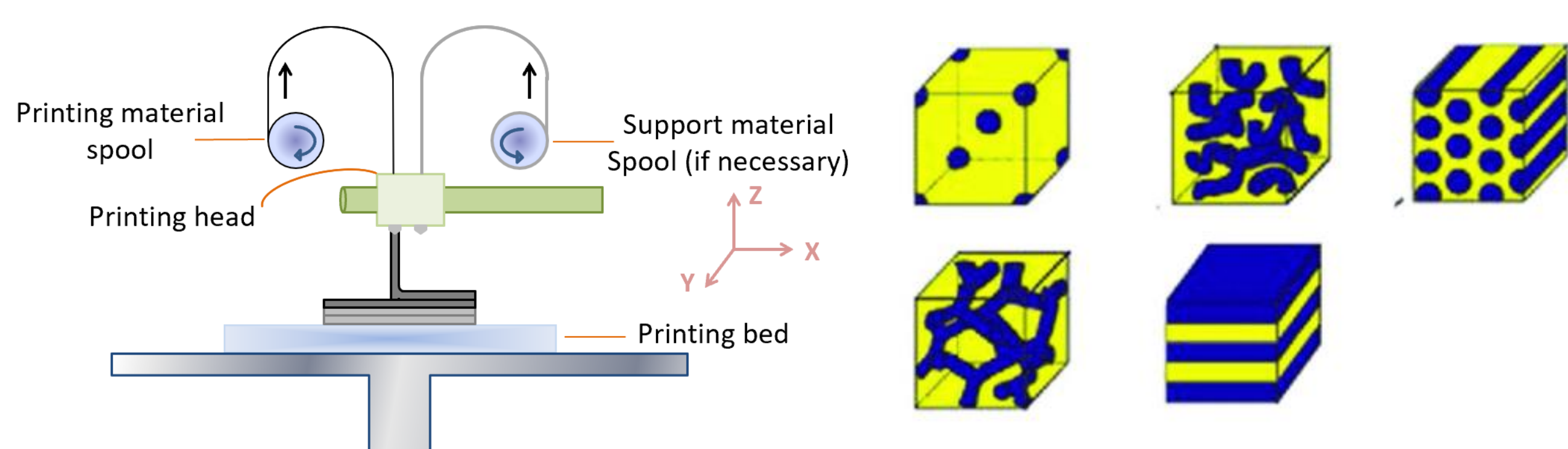
# Mechanical investigation of thermoplastic-based nanocomposites fabricated by additive manufacturing

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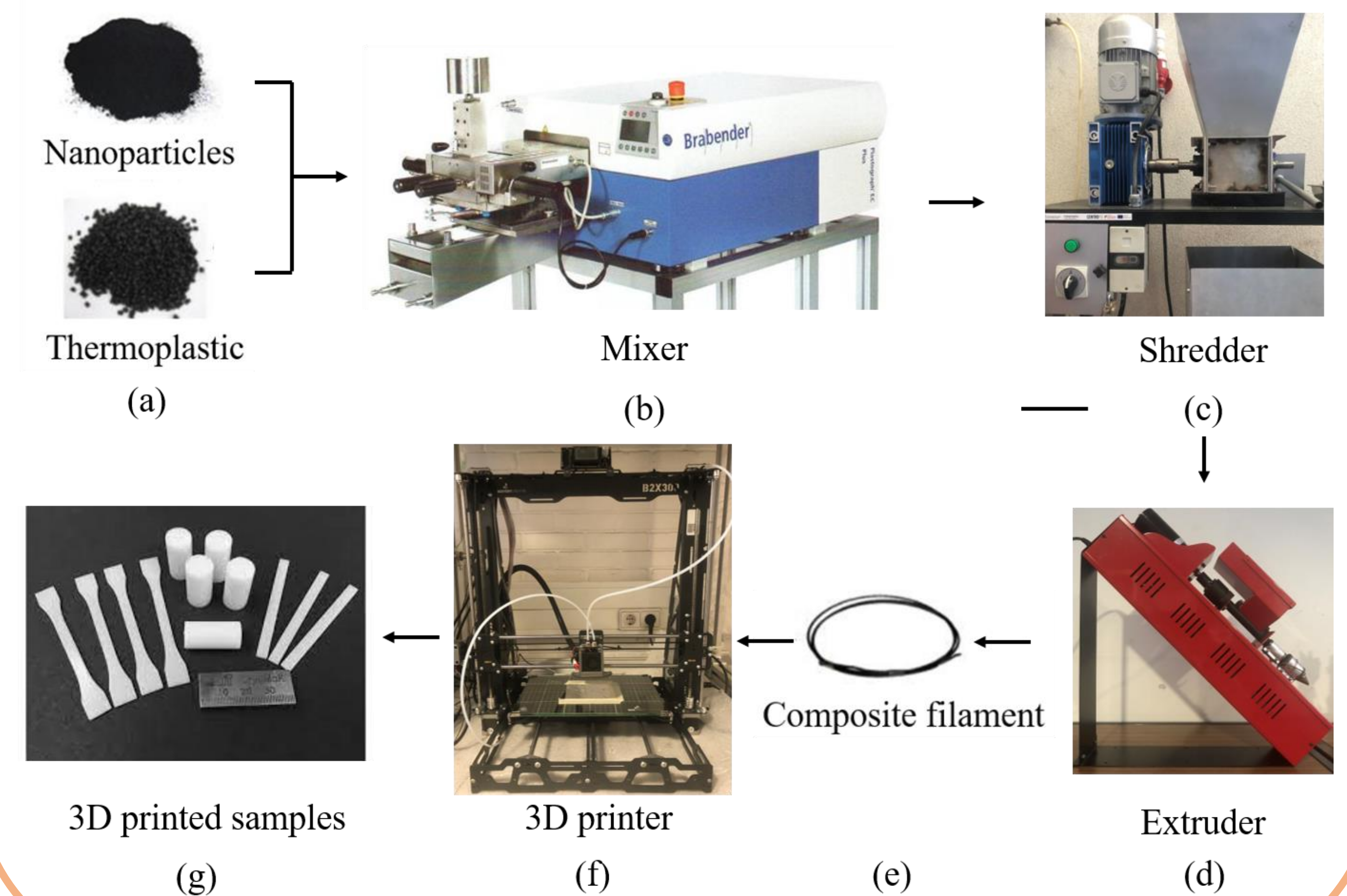
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## Introduction

- Additive Manufacturing (3D printing) show significant potential for raw materials saving, fast operation, and customized geometries.
- Nanocomposites attract researchers and industry due to their potential combination of properties from both the nanofillers and the host matrix.
- The marriage of nanomaterials and AM offer new opportunities to each other.

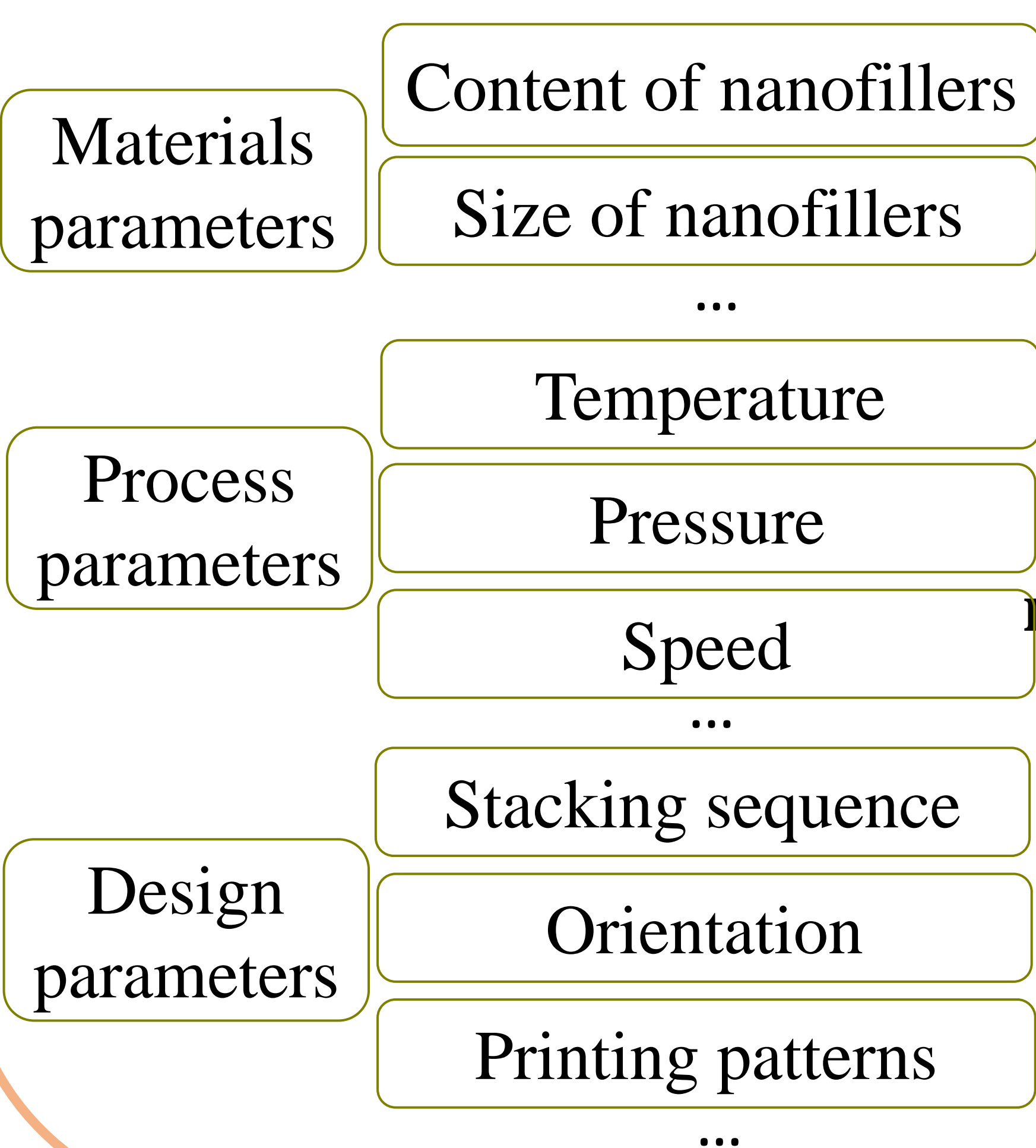


## Material and samples



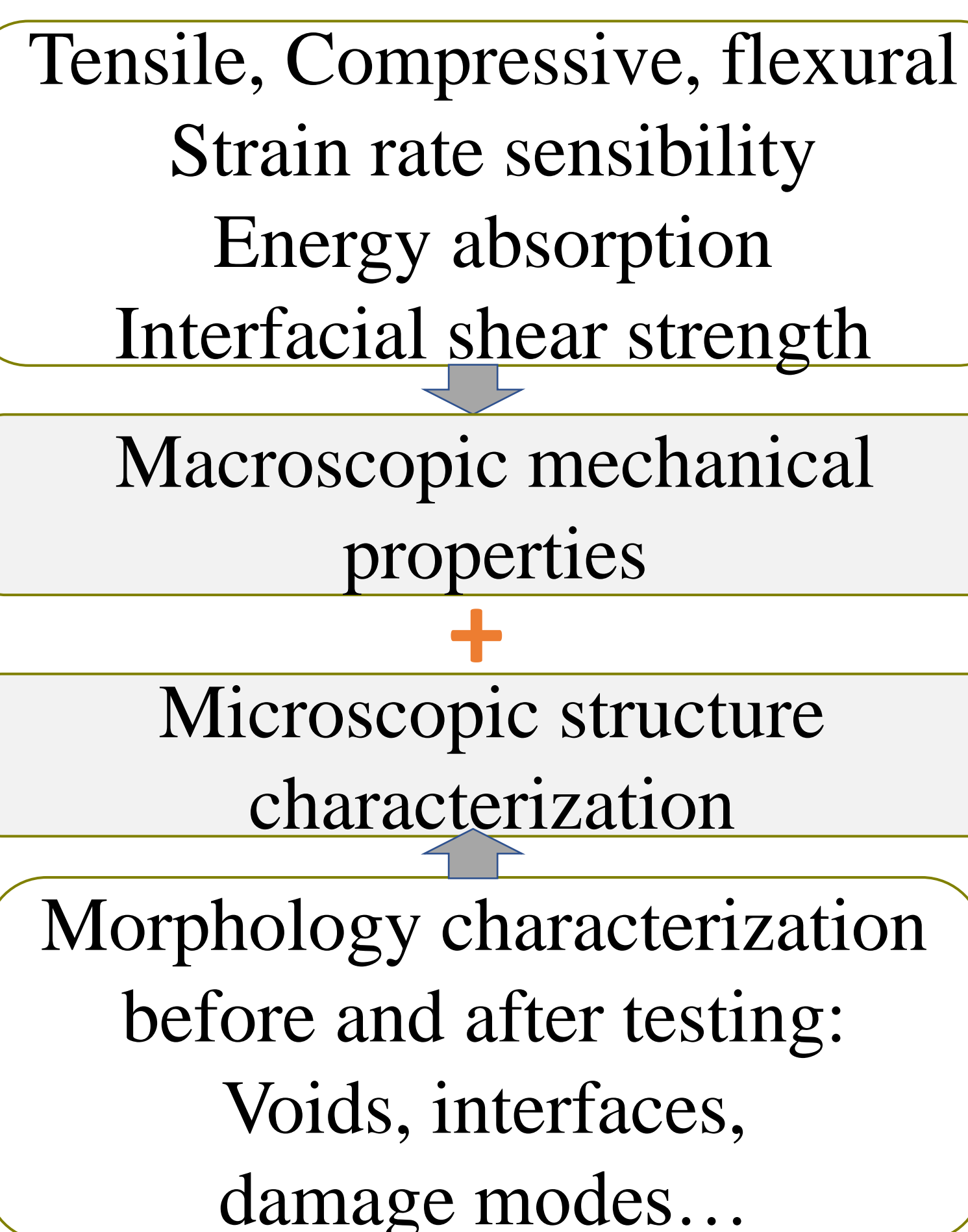
## Methodology

### Samples preparation

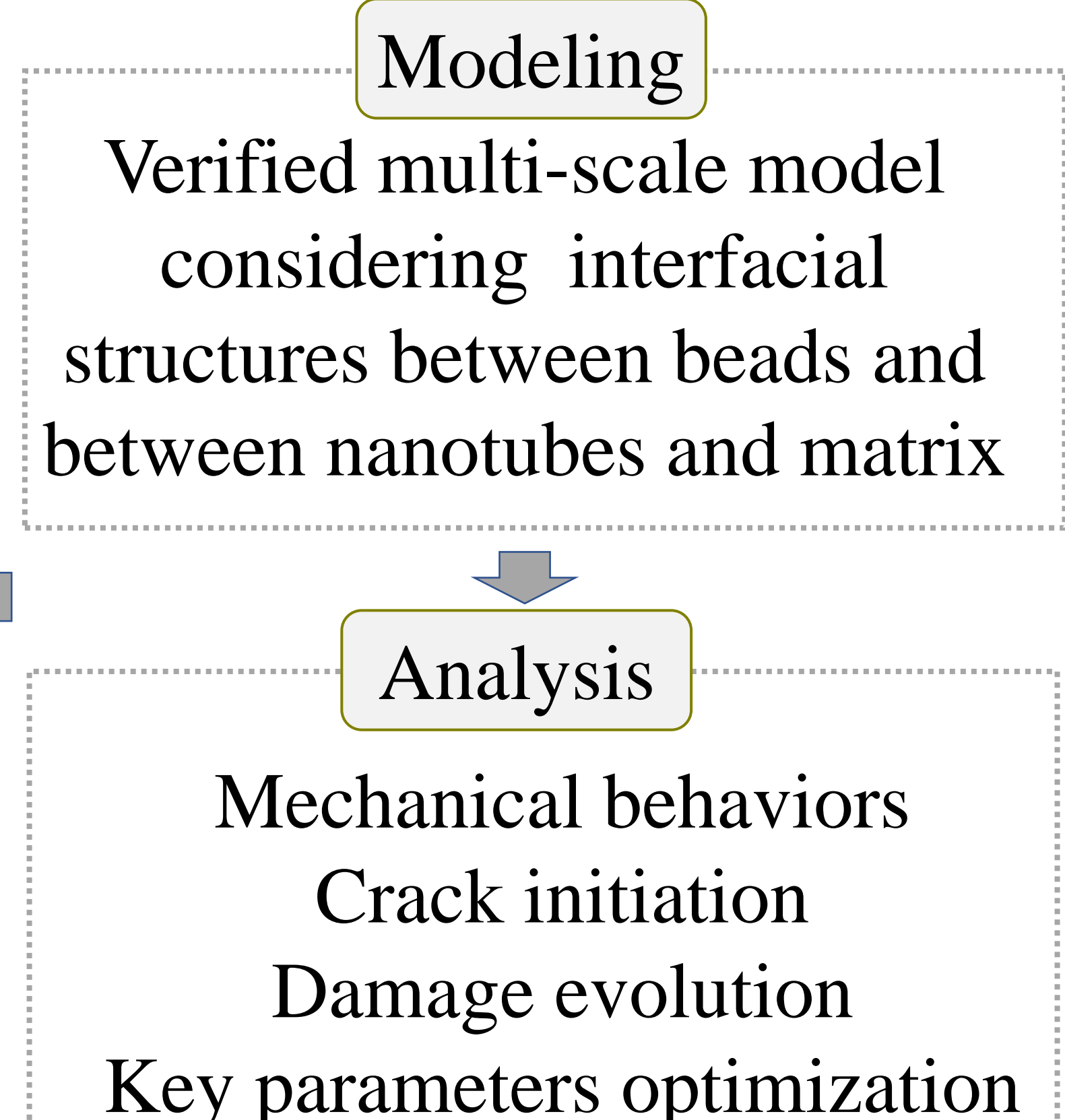


Single effect  
3D printed nanocomposites  
Combined effect

### Experiments



### Modeling and simulation



## Perspectives

- Single and combined parameters effect on mechanical properties and parameter optimization;
- Special focus on interfacial behaviors under multi-scale characterization and improvement methods;
- Hybrid effect of different nanofillers on the balance of rigidity and ductility of printed nanocomposites;
- Modeling and simulation for 3D printed nanocomposites considering interfacial structures between deposited beads as well as between nanotubes and matrix.

## Acknowledgement

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