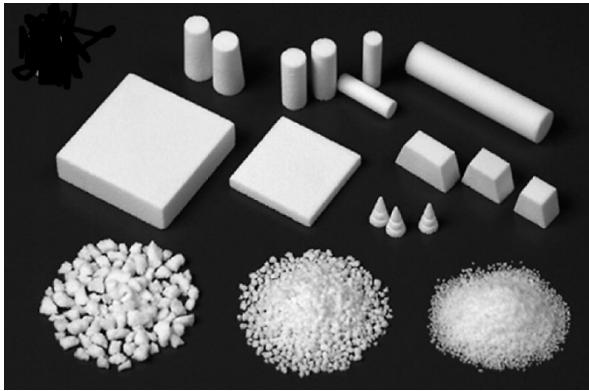
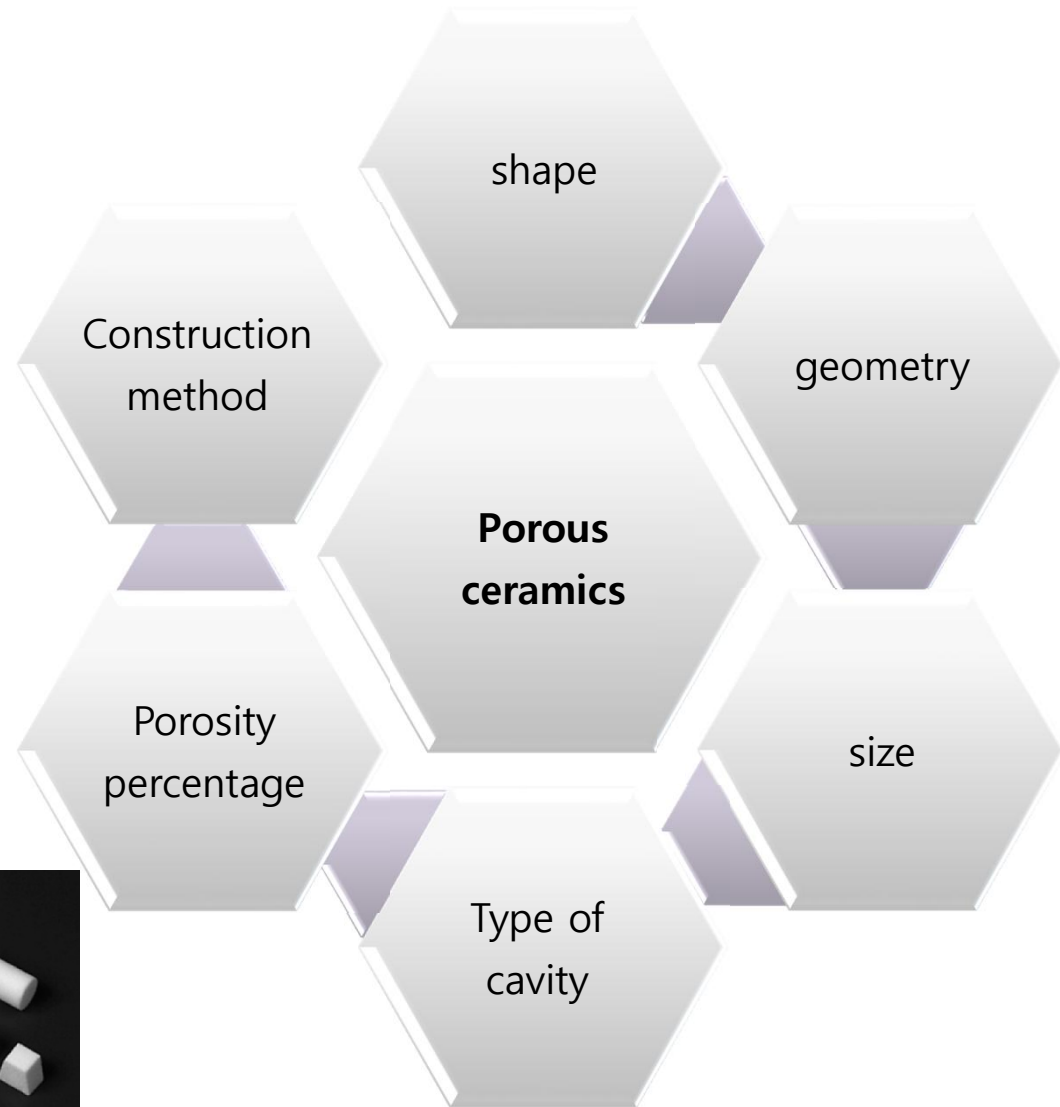




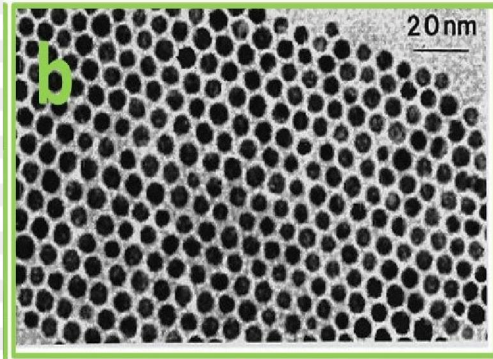
**Porous HA
bioceramic**

introduction:

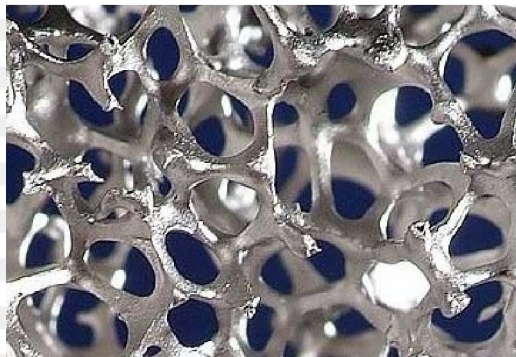


2

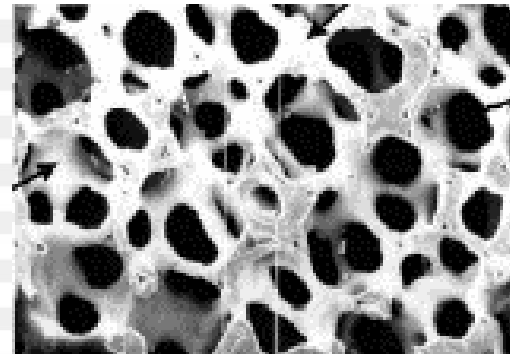
Porous bioceramics:



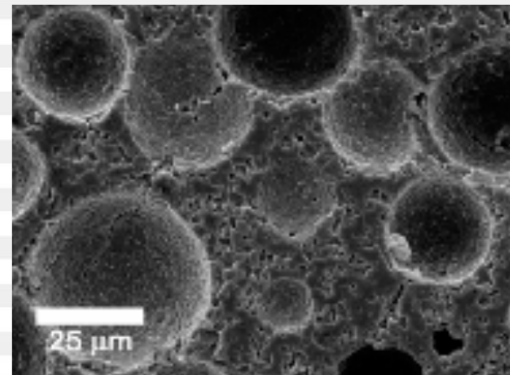
2D porous ceramic



3D porous ceramic



open pores

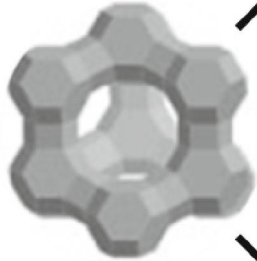


open pores

3

Type of porous ceramics:

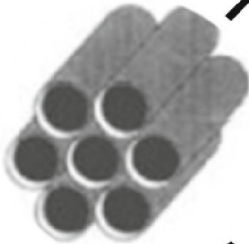
< 2 nm



microporous

drug delivery ,zeolites

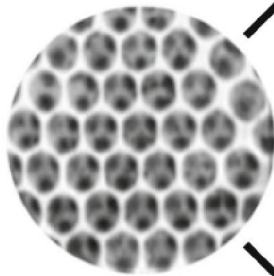
2-50 nm



mesoporous

catalysis, adsorption, separations, drug delivery systems and gas sensors

>50 nm

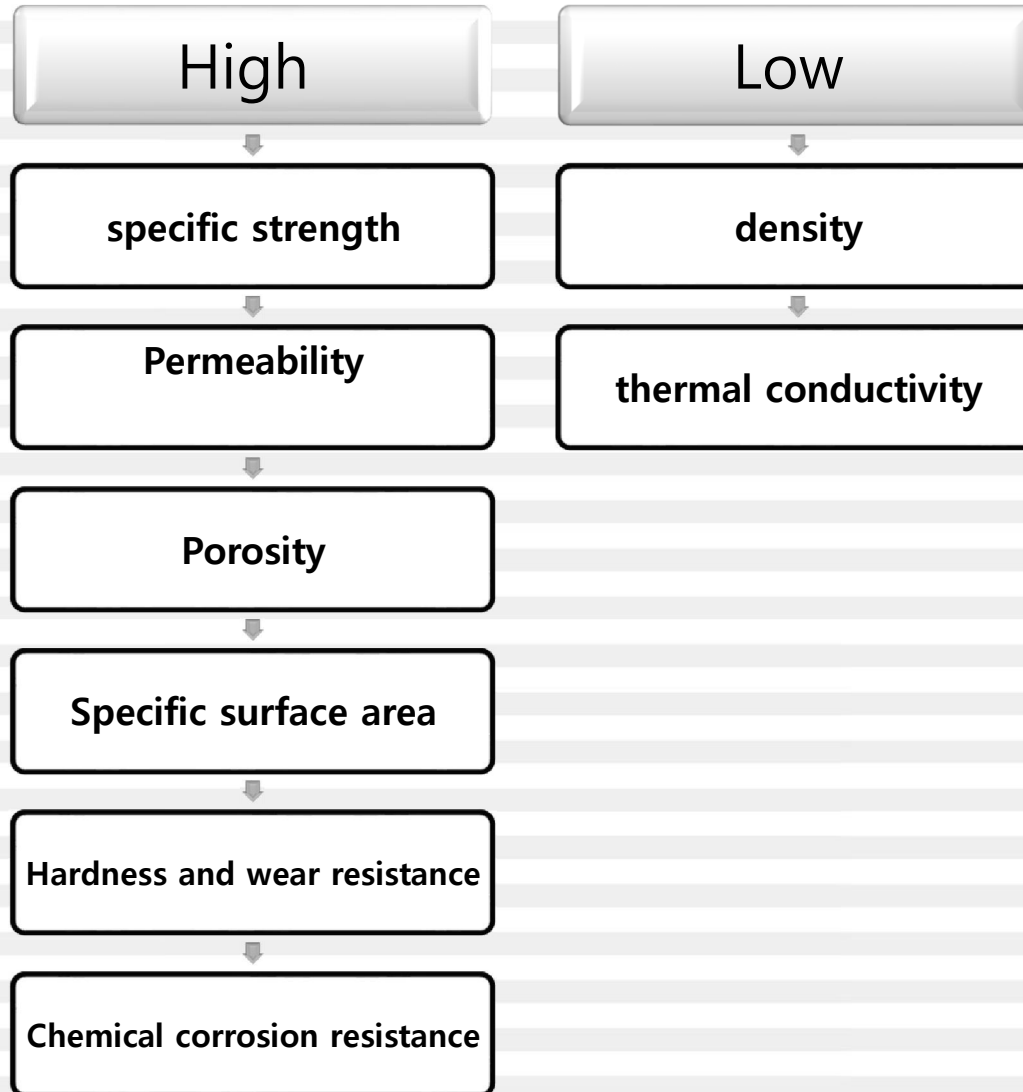


macroporous

tissue engineering

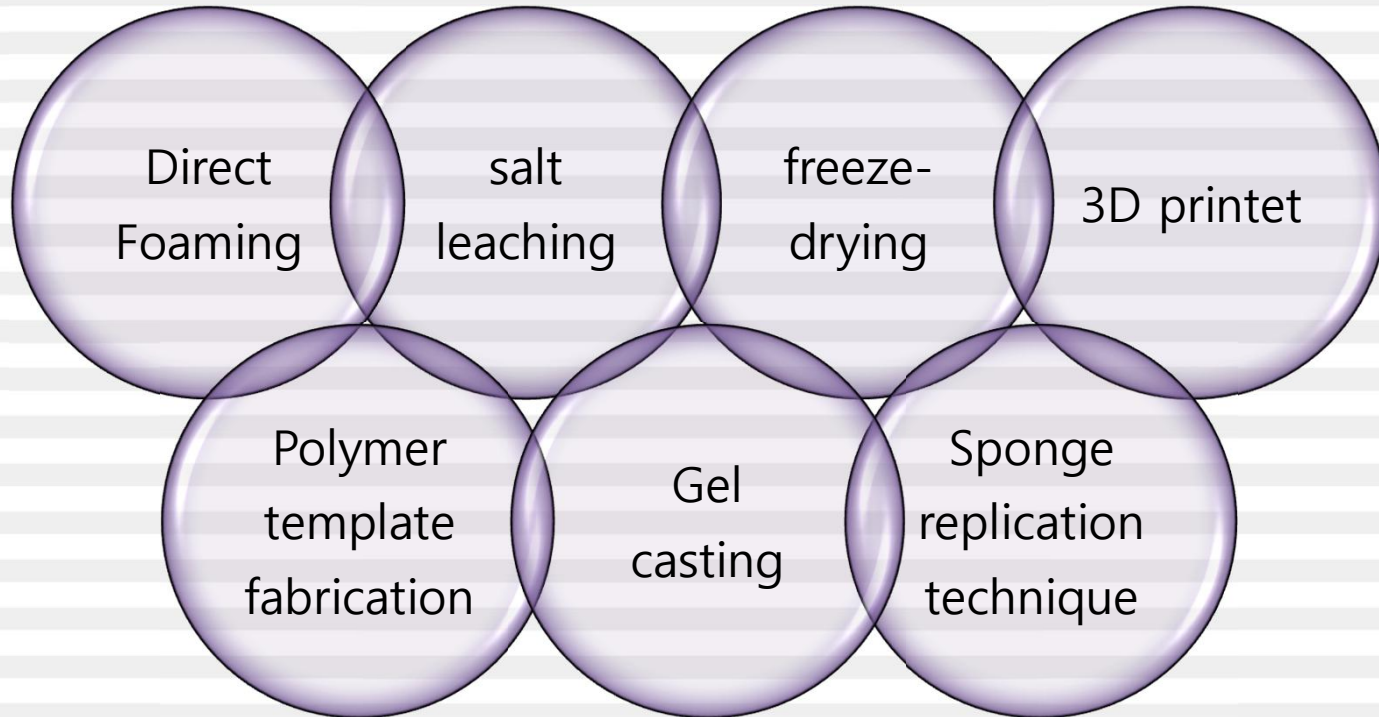
4

properties of porous ceramic:

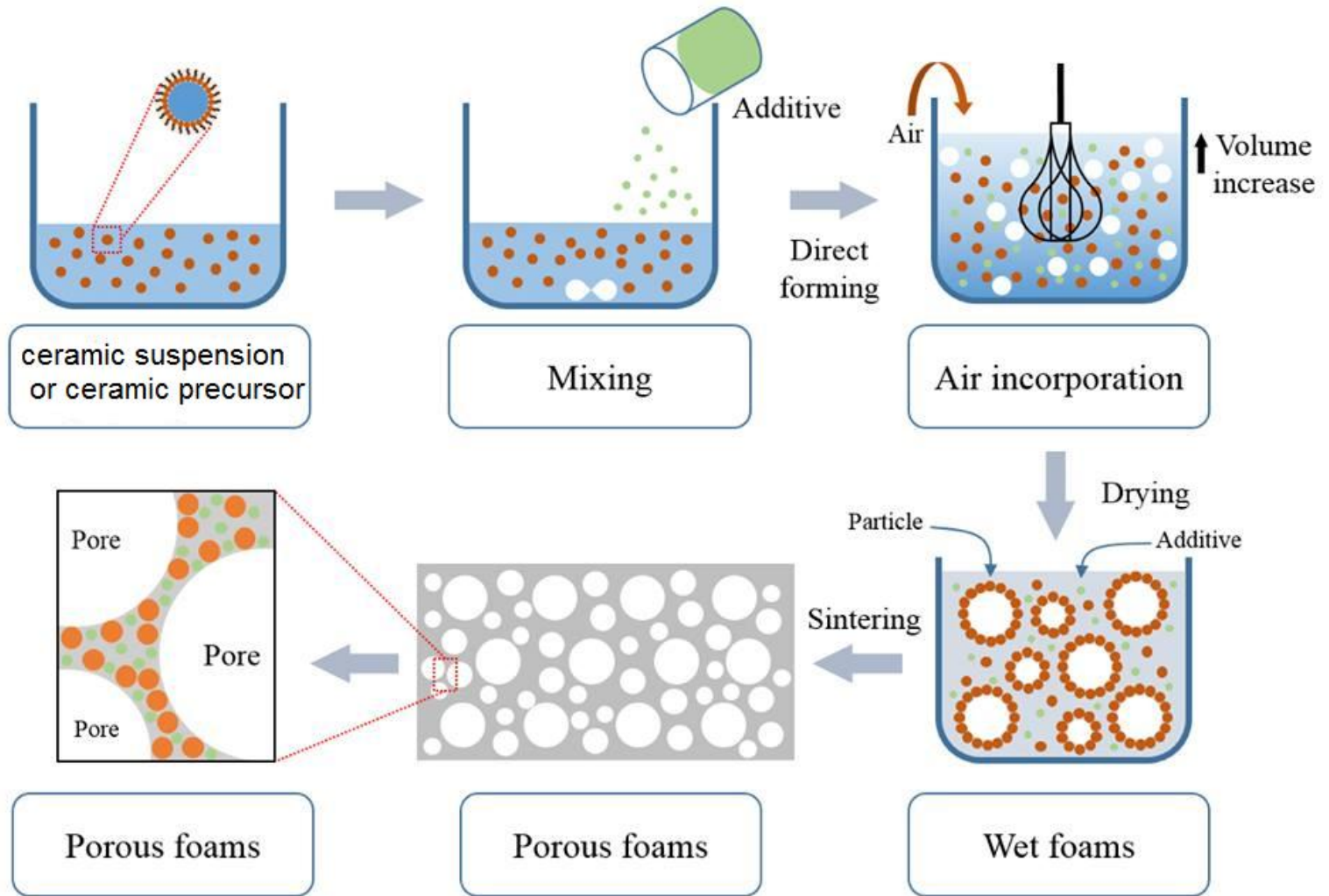


5

Preparation of porous HA bioceramics:

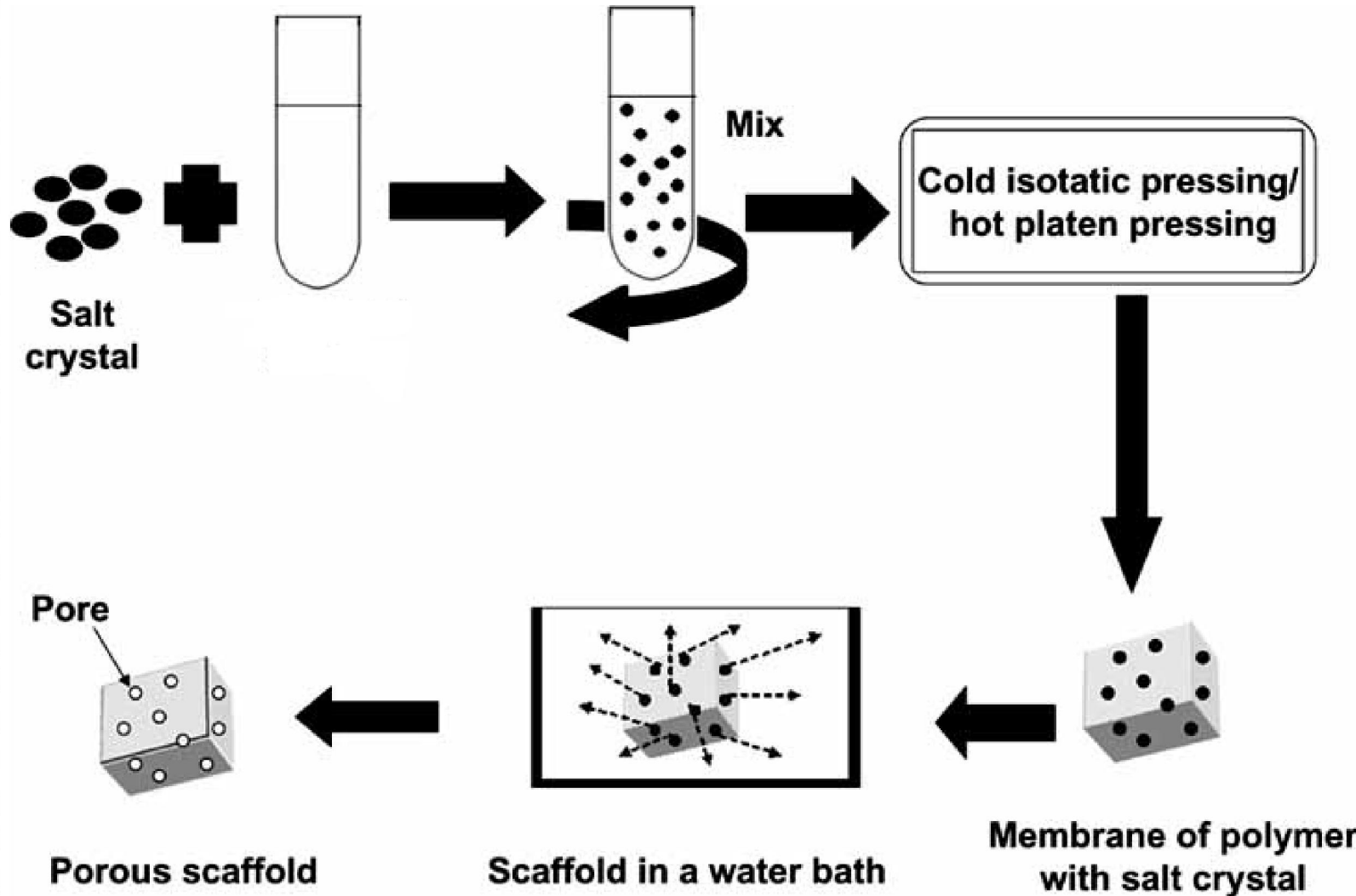


Direct Foaming:



6

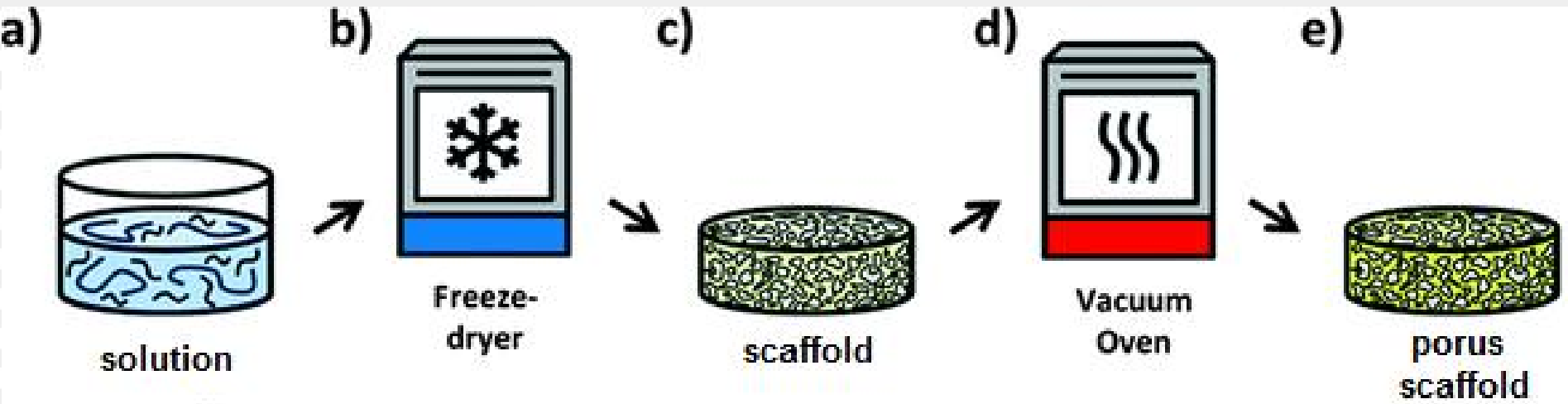
salt leaching:



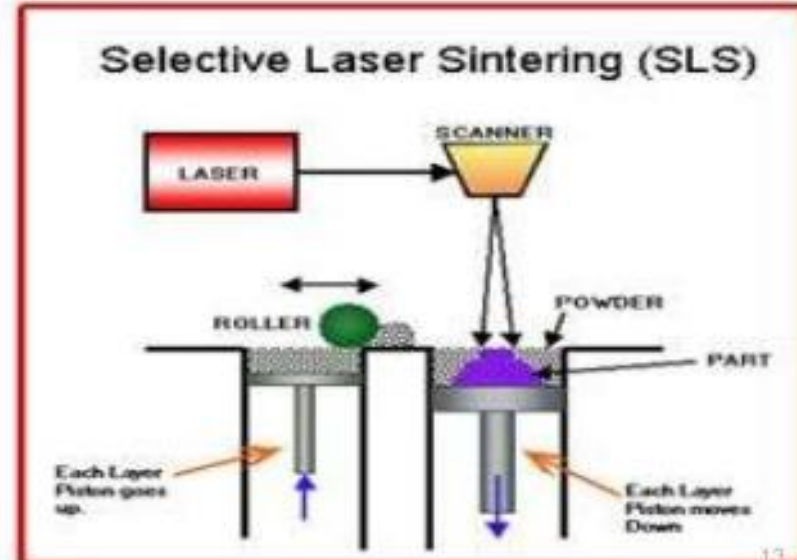
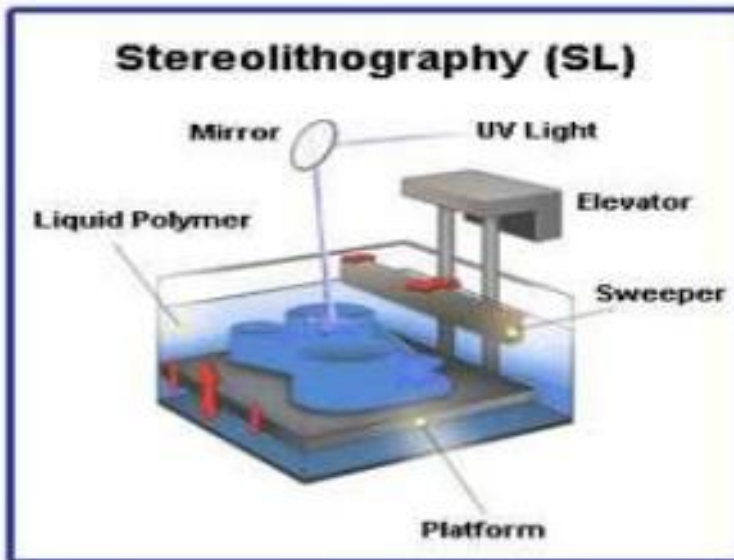
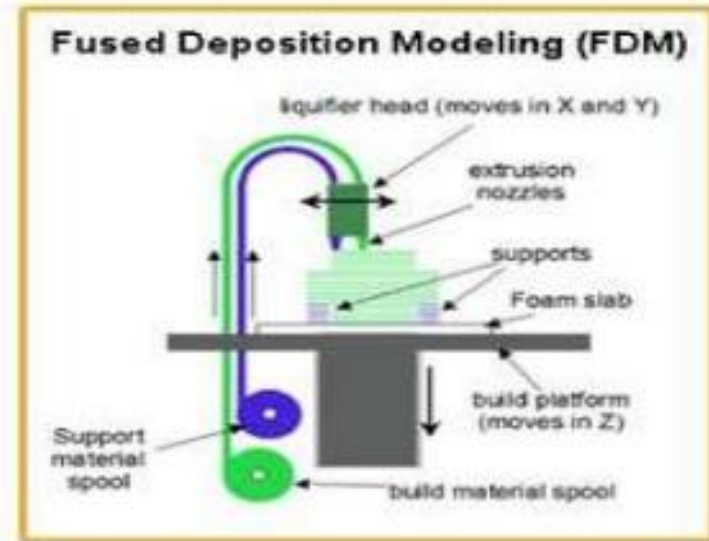
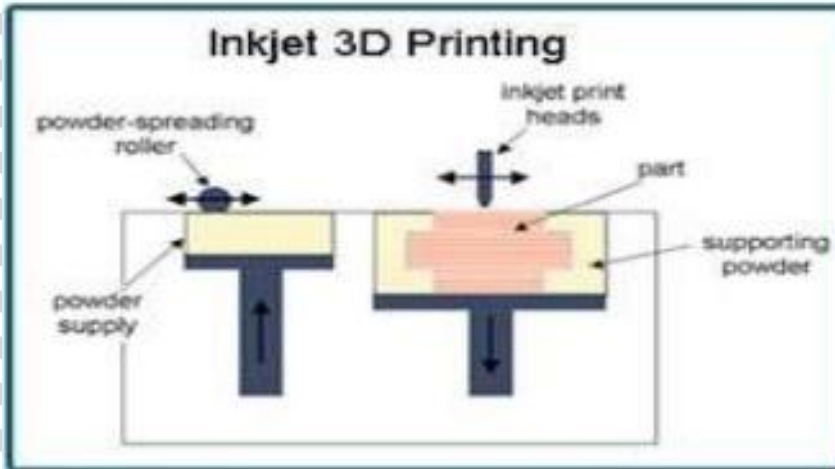
7

8

freeze-drying:

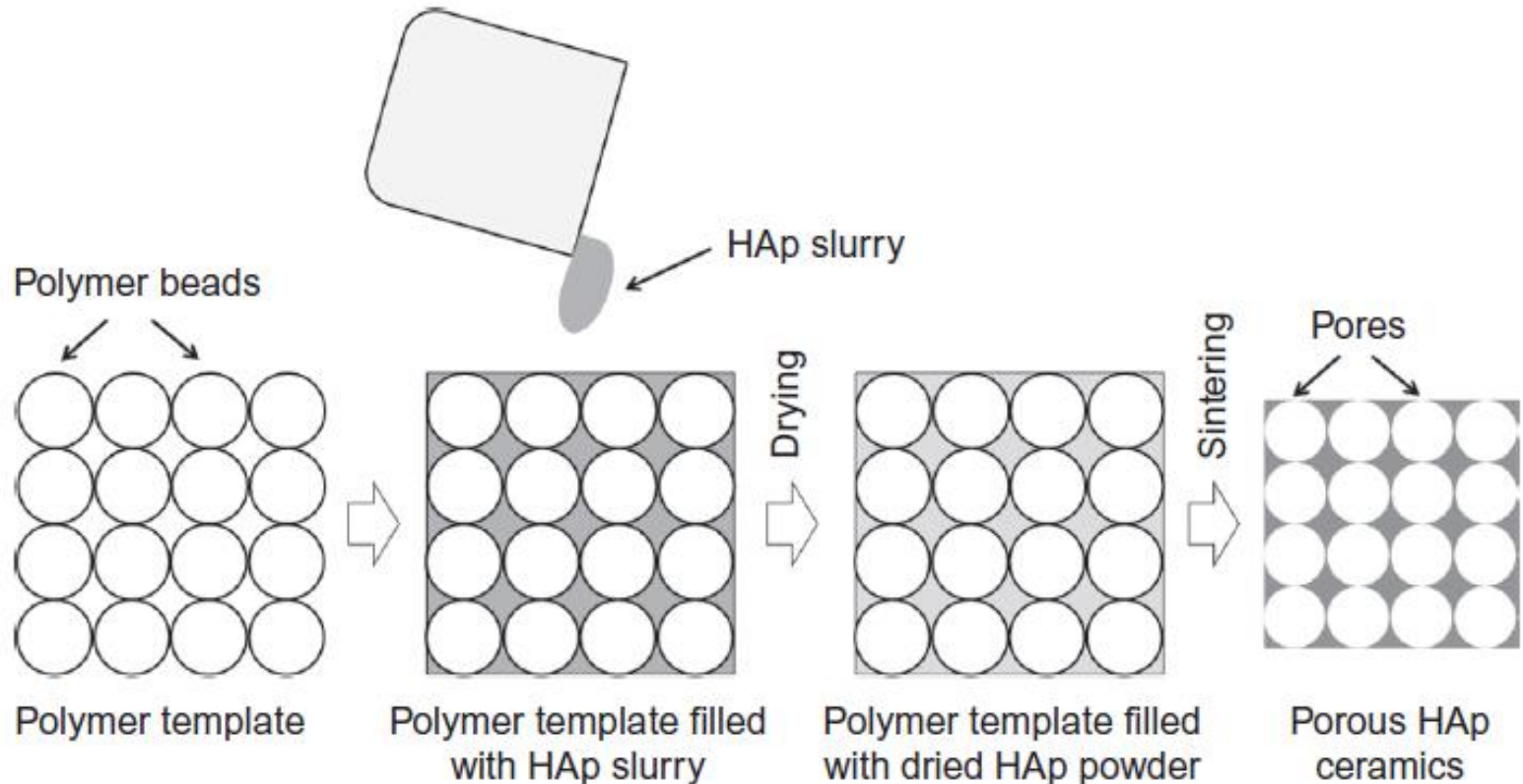


3D printer:



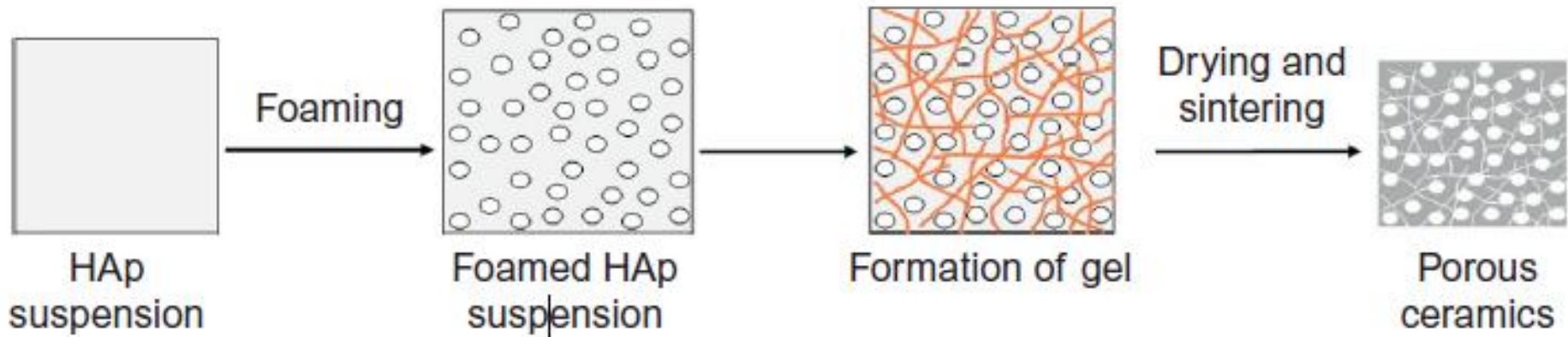
Polymer template fabrication:

10

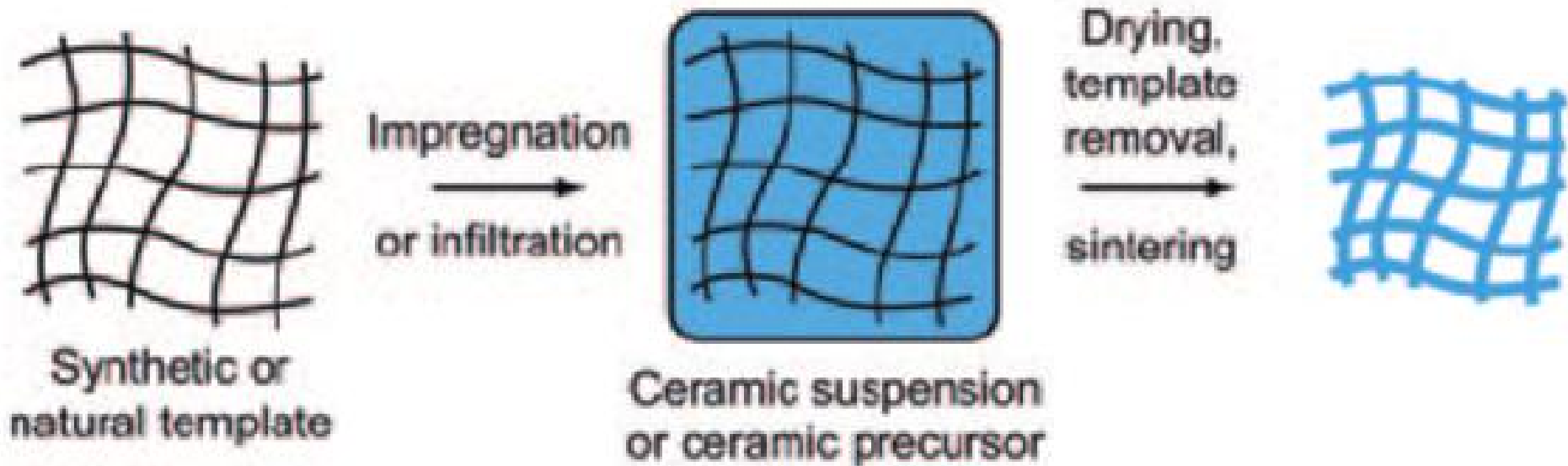


11

Gel casting:

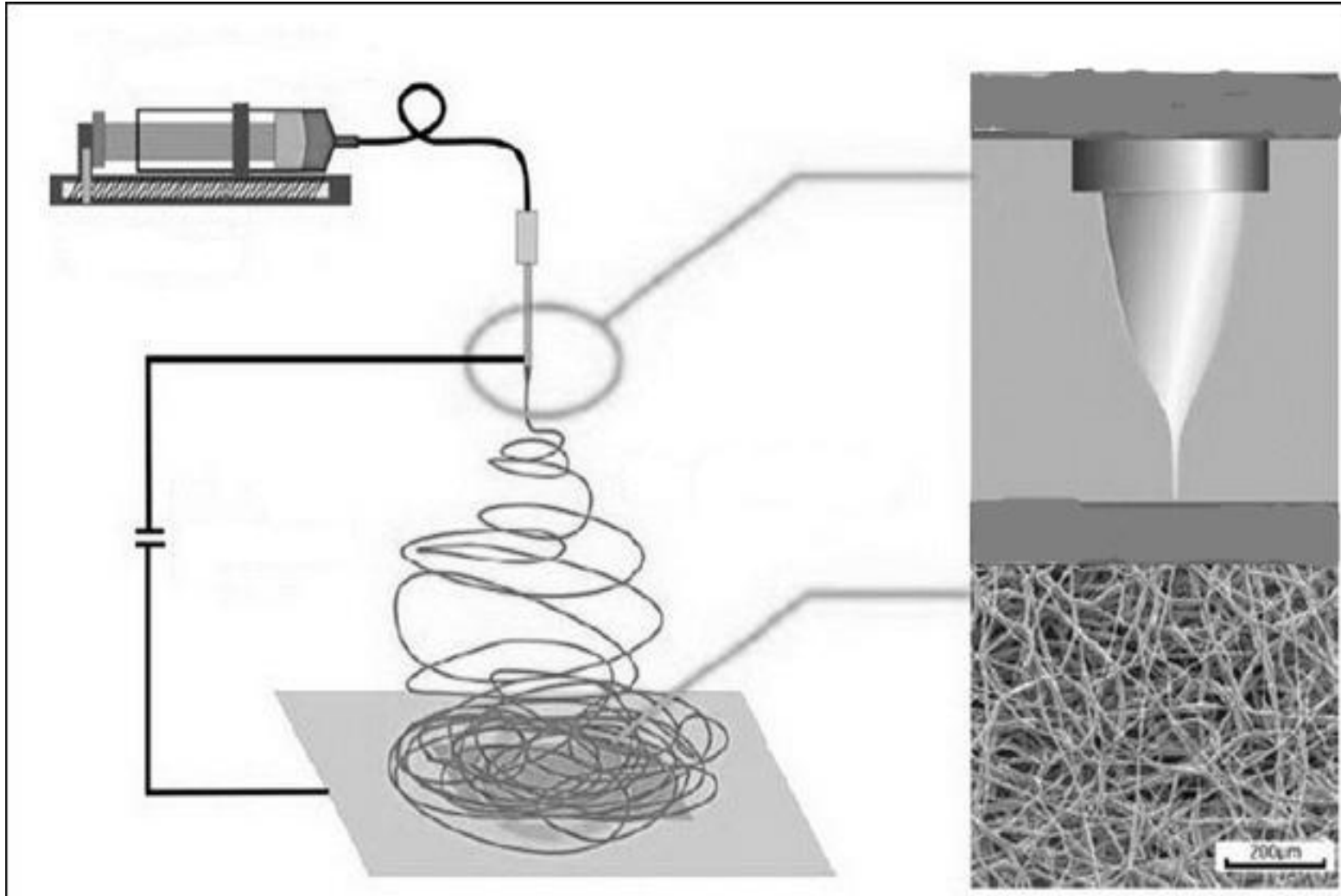


12 Sponge replication technique:



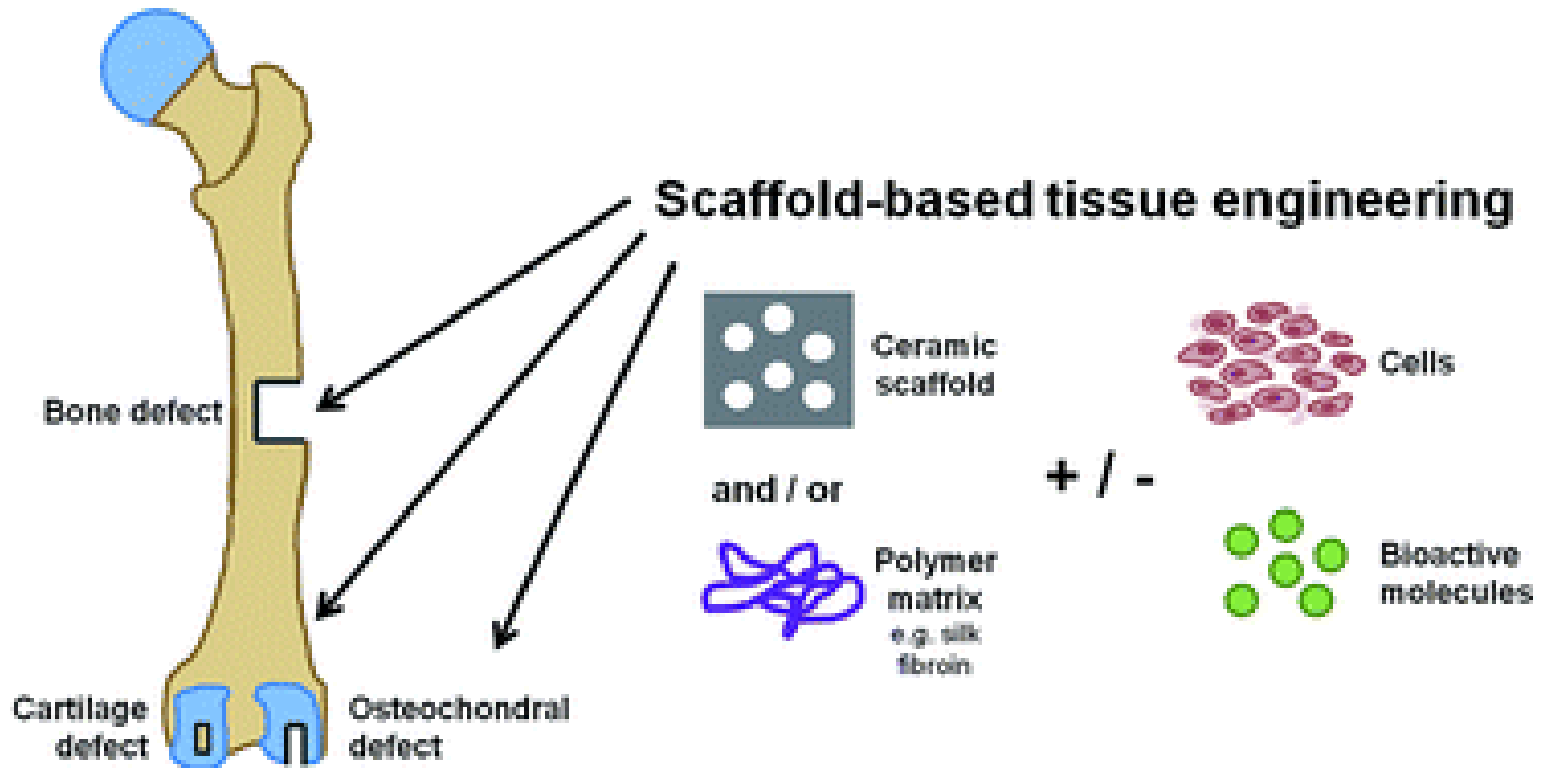
Electrospun:

13



Application:

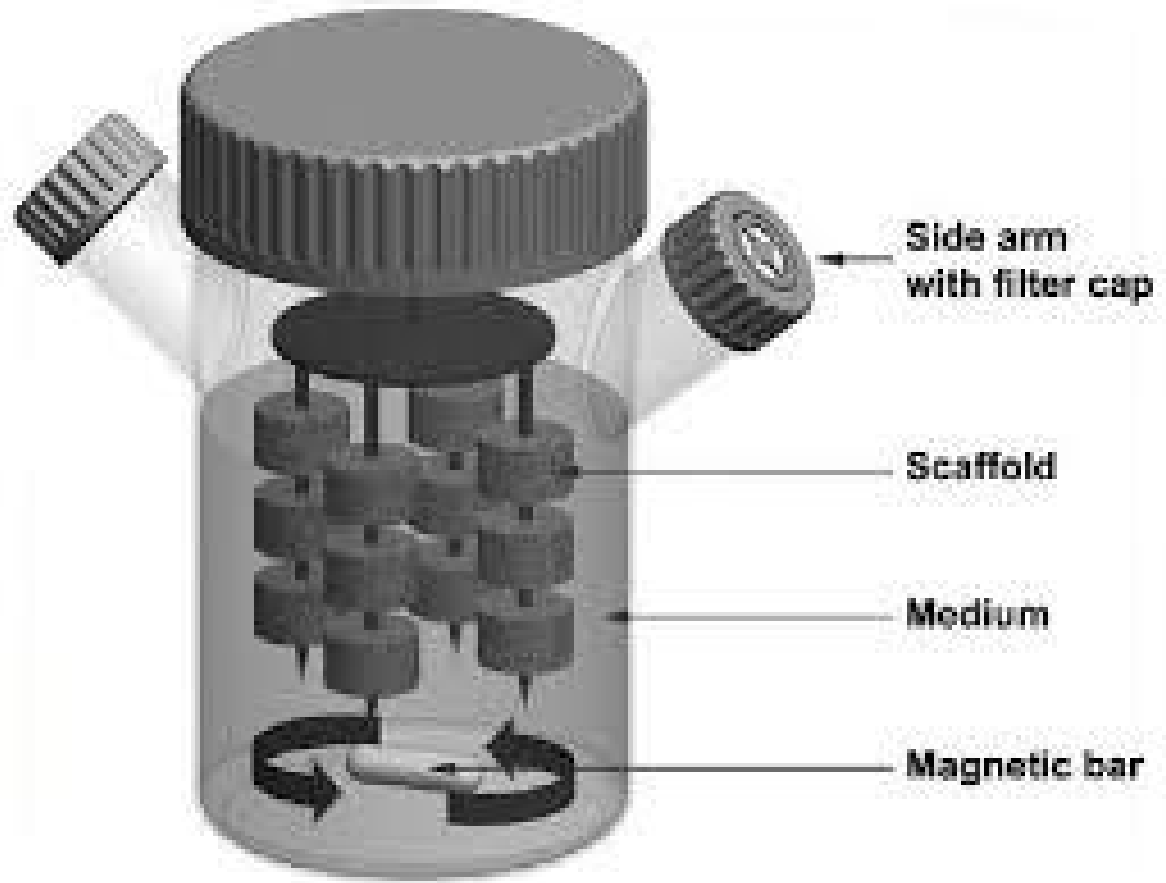
➤ Tissue engineering



14

Application:

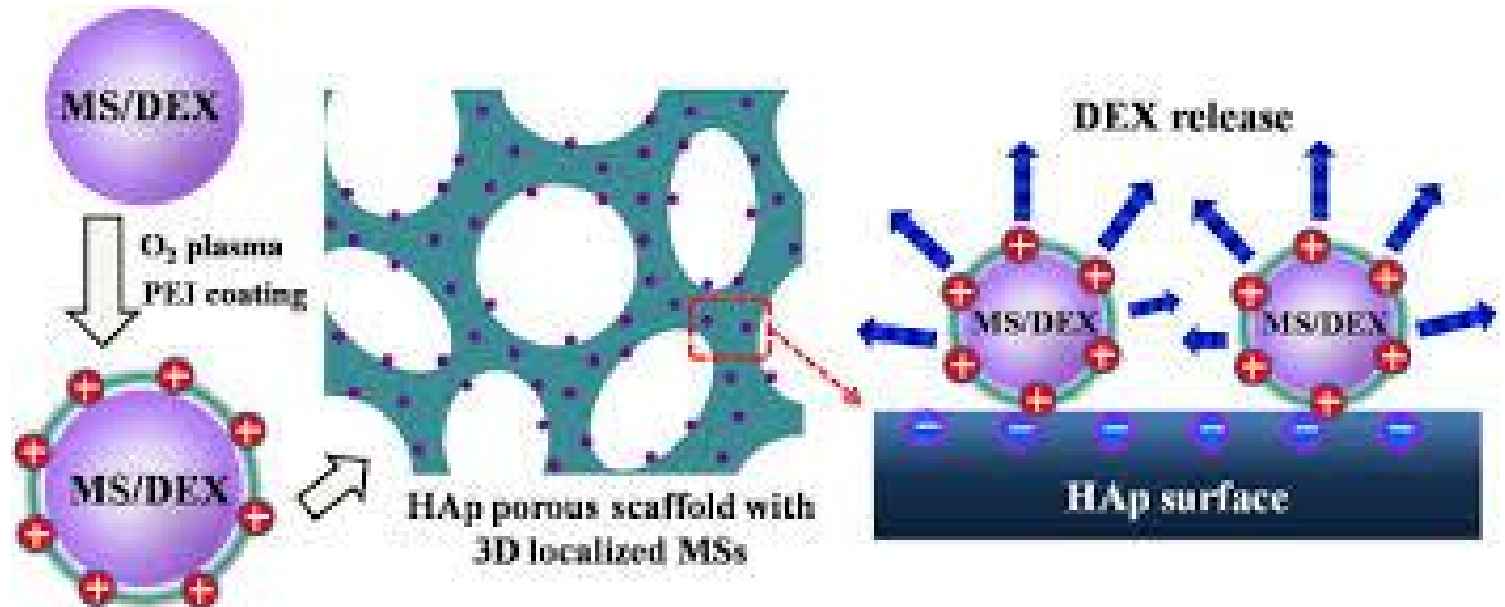
➤ bioreactor



15

Application:

- Drug delivery



references:

- **Introductory Chapter: A Brief Introduction to Porous Ceramic-2018**
- **Porous hydroxyapatite for drug delivery-2015**
- **Porous Hydroxyapatite Bioceramic Scaffolds for Drug Delivery and Bone Regeneration-2014**
- **Porous hydroxyapatite bioceramics in bone tissue engineering: current uses and perspectives-2015**
- **A Methodology for Fabrication of Hydroxyapatite and Fluorapatite Porous Scaffolds by Salt Leaching Technique for Bone Tissue Regeneration-2016**