

INTEGRATION OF LATTICE STRUCTURES IN MEDICAL DEVICES MANUFACTURED BY AM (SELECTIVE LASER SINTERING- SLS)

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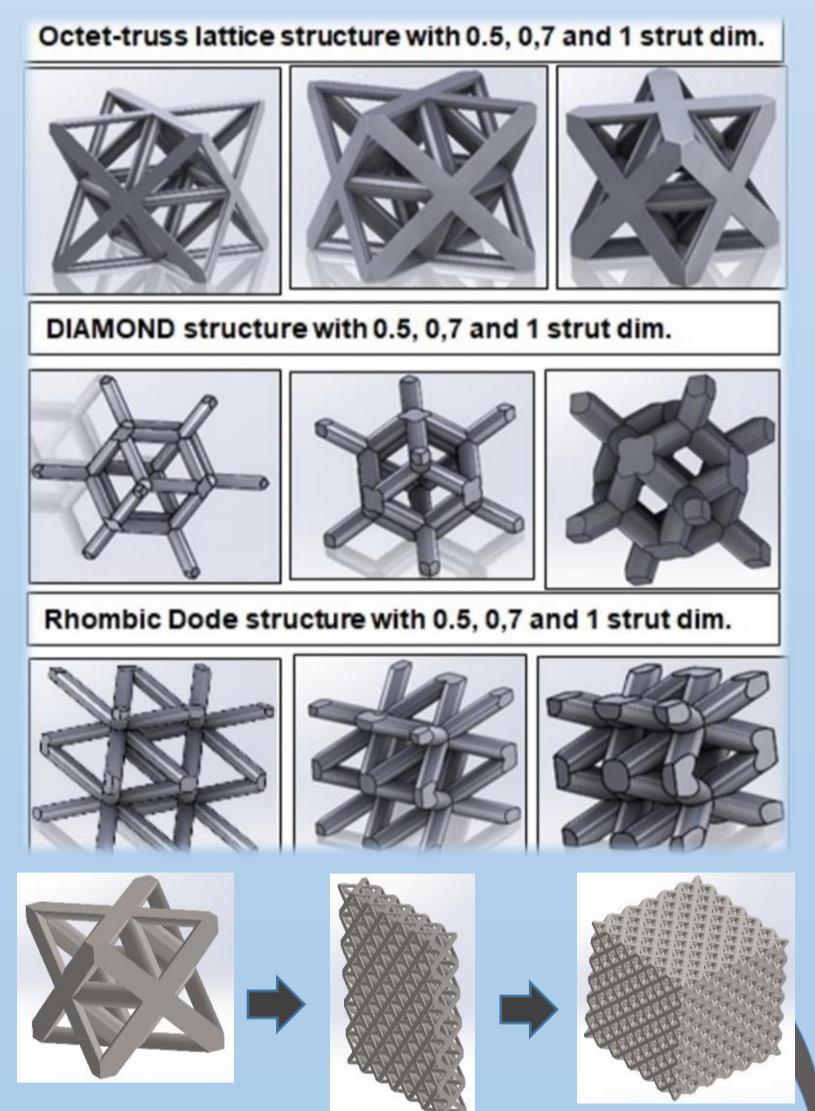
IMPLEMENTING ADDITIVE MANUFACTURING BY SELECTIVE LASER SINTERING FOR MEDICAL DEVICES:



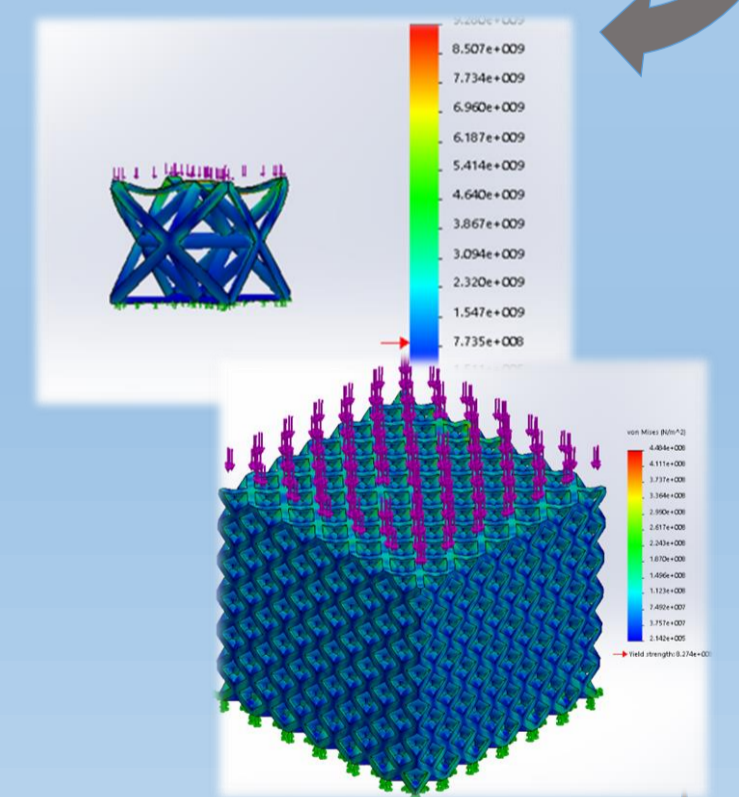
Reconstruction Patient matched implant MIMICS



Lattice structure design strategy: 3D object design in Solidworks

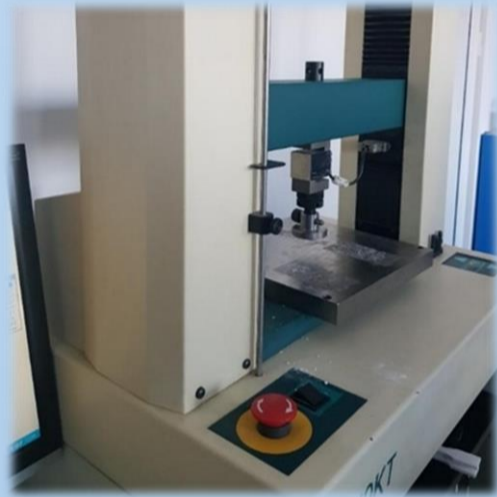
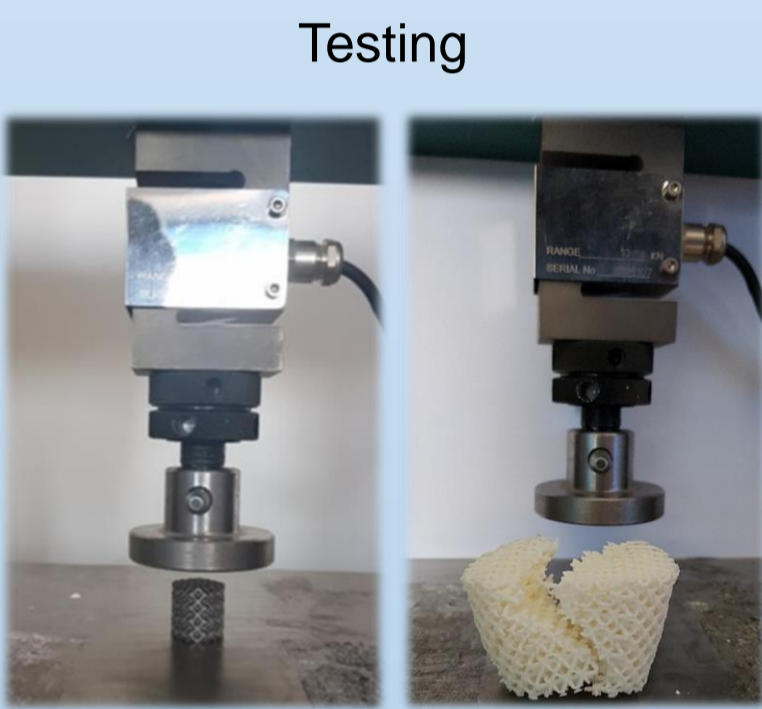


FEA simulation on octet-truss lattice structure



BENEFITS IN MEDICAL FIELD:

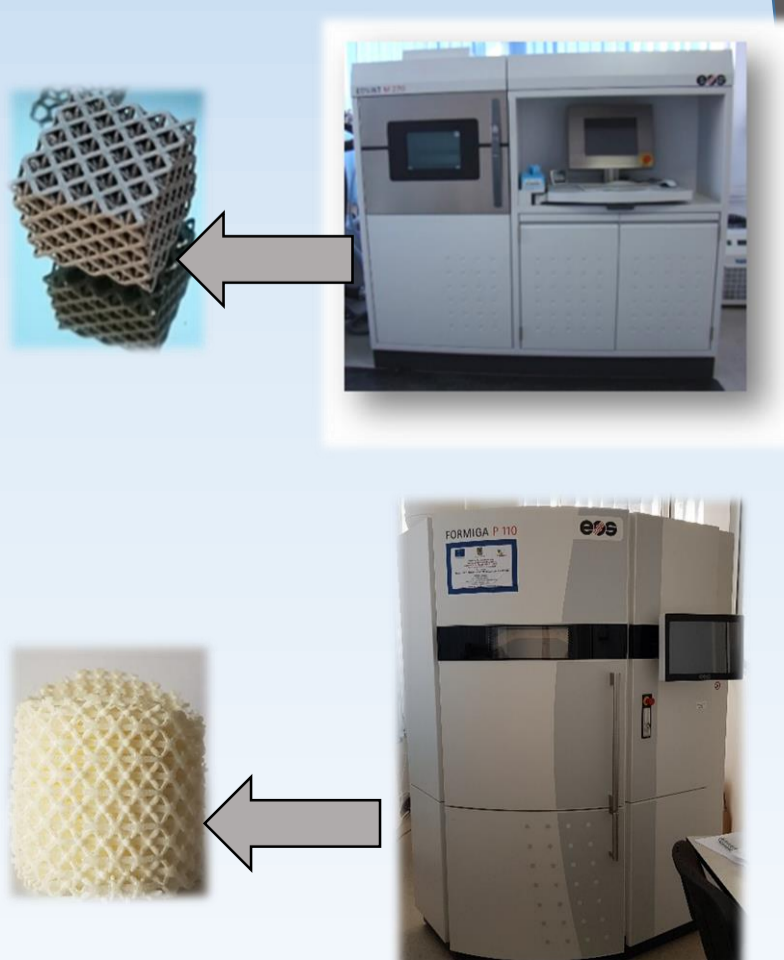
- Freedom of design
- Productivity and cost advantages for complex implants
- Are an emerging solution to weight, energy and advanced manufacturing time reduction
- Used to create rough surfaces, to stimulate bone ingrowth (osseointegration)
- To mimic bone properties in order to avoid stress-shielding
- To achieve excellent performance and multi functionality while reducing weight
- Suitable for cell attachment and growth on implants
- Consume less material while still distributing the necessary strength



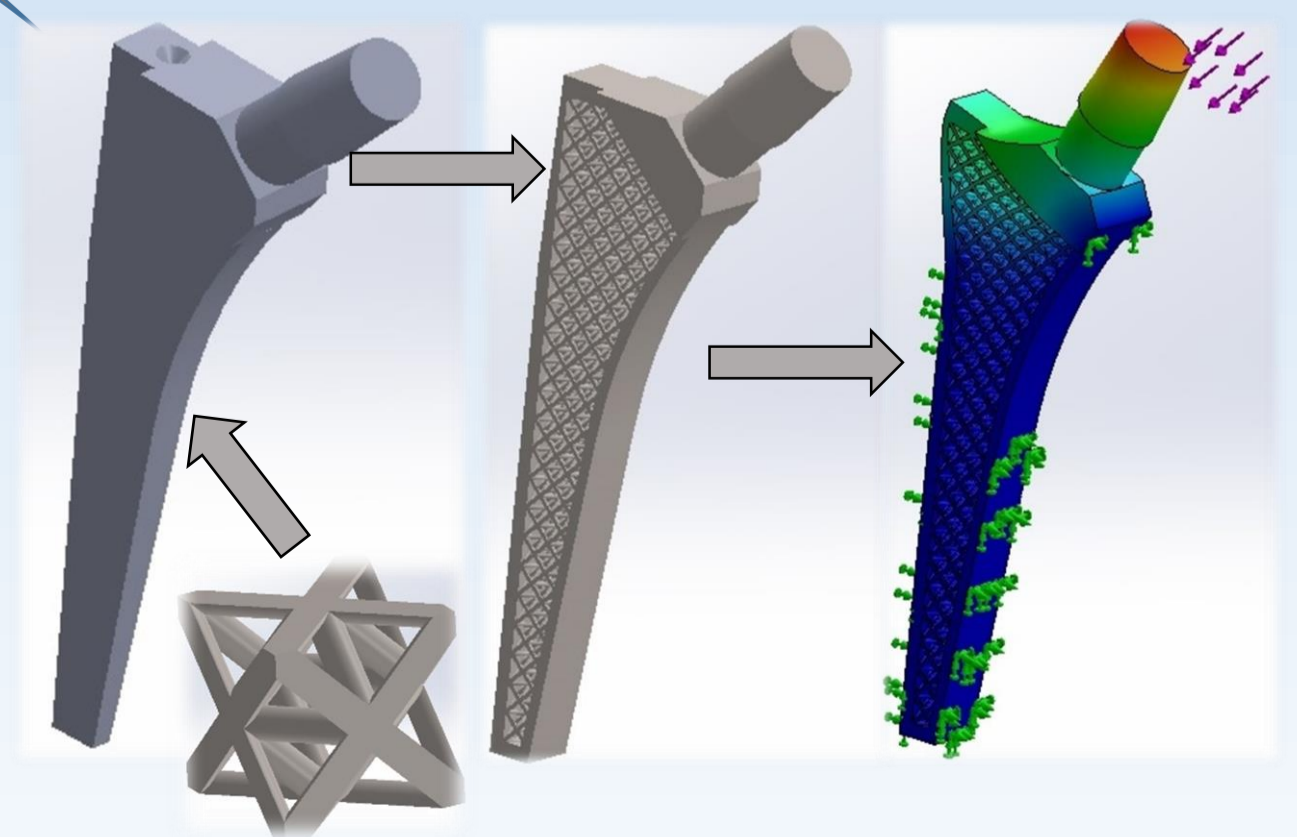
Post-processing



Manufacturing lattice structure, implant



Integration of lattice structures in design



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