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ΘΕΜΑ: **Organ printing**

ΤΟΠΟΣ: Αίθουσα Σεμιναρίων ITE/IEXMH

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ΩΡΑ: **12:30**

ΠΕΡΙΛΗΨΗ:

Organ printing or biomedical application of rapid prototyping, also defined as additive layer-by-layer biomanufacturing, is an emerging transforming technology that has potential for surpassing traditional solid scaffold-based tissue engineering. Organ printing has certain advantages: it is an automated approach that offers a pathway for scalable reproducible mass production of tissue engineered products; it allows a precised simultaneous 3D positioning of several cell types; it enables creation tissue with a high level of cell density; it can solve the problem of vascularization in thick tissue constructs; finally, organ printing can be done in situ. The ultimate goal of organ-printing technology is to fabricate 3D vascularized functional living human organs suitable for clinical implantation. The main practical outcomes of organ-printing technology are industrial scalable robotic biofabrication of complex human tissues and organs, automated tissue-based in vitro assays for clinical diagnostics, drug discovery and drug toxicity, and complex in vitro models of human diseases. The conceptual framework and recent developments in organ-printing technology, main technological barriers and challenges, and potential future practical applications will be outlined.