

Seminar Title:

Biomedicine's next frontier: biomimicry, customization and point-of-care manufacturing using 4D bioprinting

Seminar Summary:

The growing push for 3-D tissue models is limited by challenges in automated handling, processing and scalability of the technology to various types of materials and high-throughput applications. To meet these challenges, 4D bioprinting and human-cell derived ECM bioinks can allow researchers to biologically mimic the formation of complex, heterogeneous 3-D structures and to scale the technology to high-throughput and clinically translatable applications. This webinar will discuss the latest megatrends behind bioprinting developments as well as scientific and medical applications developed for tissue engineering, regenerative medicine, preclinical screening and testing, veterinary medicine, as well as personalized drug and food development. Some key topics to be discussed include:

- Key advantages of 3D bioprinting over other techniques
- Alterations in cellular physiology of cells in 3D vs. 2D
- Megatrends behind bioprinting's importance in biomedicine
- Introduction of biomedical applications of bioprinting across various disciplines
- ROKIT Healthcare's work in clinical translation of bioprinting in the operating room
- Built-in cell incubator, diverse material use, and high-throughput capabilities of all-in-one bioprinting platforms

The seminar reinforces the significance of bioprinting advancements in the age of Industry 4.0 – as a movement aligned with global megatrends in healthcare toward personalized medicine, computer-aided production of biological processes, and autologous regenerative therapy.

Speaker Biography:

Da-Yae Lee is a Senior Bio-Consultant and Project Leader in the Global Business Development Team at ROKIT Healthcare. She is in charge of business development and overseas sales for the dissemination and propagation of service platforms that bring together 4D bioprinting technologies, computer-aided design and human biomaterials to offer breakthrough research and medical solutions. Before joining ROKIT Healthcare, Da-Yae was a research assistant at the MIT Koch Institute for Integrative Cancer Research and Brigham and Women's Hospital Crohn's and Colitis Center, with experiences both at the bench and in clinical trial coordination. She has a B.A. in Biochemistry from Smith College in Massachusetts, U.S.A.

ROKIT Healthcare believes that developing a platform for human organ regeneration services based on the bio-printing technology can fundamentally resolve the global healthcare phenomenon of "people living longer and the government's medical budget decreasing". ROKIT Healthcare believes bioprinting lends a promising, innovative solution from the convergence of biology, engineering, physics, artificial intelligence, tissue engineering, medicine, and excellent management skills.