Meetings International SciTechnol

Yvonne Lim, Biomater Med Appl 2018, Volume: 2
DOI: 10.4172/2577-0268-C1-002

Annual Conference on

3D PRINTING & BIO-PRINTING IN HEALTHCARE

August 20-21, 2018 | Singapore City, Singapore

Medical additive manufacturing applications

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Orthopedics companies have increasingly come to rely on EOS Additive Manufacturing (AM) solutions to produce implants and disposable surgical instruments. This solves present-day challenges: even though no human body is exactly like another, implants must fit perfectly and be quickly tolerated by the body so they can bring about a long-term improvement in the patient's quality of life. Standard products are inadequate here. Instead, products must be tailor-fitted to the patient, with an added need for fast availability at a reasonable price. Compared to conventional implant production methods, EOS AM offers multiple benefits. Based on 3D CAD data for example, patient-specific parts can be generated without using tools, using high-quality, and medically compatible materials. Lattice structures can help to accelerate post-operative healing significantly. In addition, a definable degree of surface roughness helps bones and implants fuse better. Improved implant fit also makes the surgeon's job easier. EOS AM ensures that production costs remain economically viable, even for highly individualized products. Implant manufacturers are able to optimize 3D CAD data-based models quickly and benefit from maximum flexibility. The use of AM optimizes patient treatment, shortens hospital stays and minimizes unpleasant side effects. For complicated operations, surgeons are increasingly using patient-specific disposable surgical instruments. These enable more precise implant positioning, increasing the success rate of operations for patients, surgeons and hospitals. Additive Manufacturing methods can also be used to produce such individualized instruments. The surgeon receives a high-quality, precise product that fulfils the stringent requirements for medical applications. Compared to non-disposable instruments, hospitals save sterilisation and storage costs and benefit from increased productivity. EOS systems are able to manufacture medical devices. However, EOS cannot offer any guarantee that these devices meet all requirements.

Biography

Yvonne Lim is the Asia Pacific Business Development Manager at EOS Singapore Pte Ltd. In this role, She helps develop and promote the adoption of additive manufacturing solutions in both Aerospace and Medical industry. These customized additive manufacturing solutions target to help manufacturers' addresses common challenges seen in product development and production floor such as long production L/T and high non-recurring engineering charges associated in high mix, low volume production. In addition, through EOS consultancy arm, Additive Minds, She helps build capabilities and skills within the aerospace and medical industry in terms of process and product qualification with the certification associations. She has extensive manufacturing experience in the fields of process control, mechanical design and consultative sales across aerospace, medical, oil & gas, semiconductors and general manufacturing sectors. She holds a Mechanical Engineering (Honours) degree from the Nanyang Technological University of Singapore. She majors in manufacturing processes and quality assurance.

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