



Digital Manufacturing

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Abstract

The key word for the most recent technology on manufacturing is “Digitalization”. Through the integration of A.I. or I.T. technologies into material and manufacturing engineering, we can realize next generation of intelligent industry. In this seminar, recent progress on convergent manufacturing and artificial intelligence technology will be introduced. In particular, I have interests in developing A.I. augmented metal parts with 3d printing technology for smart mechanical system and smart factory. Through the IT integration with metal parts, one can obtain featured data related to their critical status such as deformation, fatigue and fracture. Instead of current indirect application of artificial intelligence with vision or audio data, part level or material level application of artificial intelligence will realize ultimate superintelligence of manufacturing industry. With the development of IT integrated metal parts, digitally replicated system, so called “digital twin” can be realized on the virtual space and augmented reality. This digital twin of a physical assets will be used for ease access into internal possible problem for inspection of system without total disassembly of whole mechanical system.