

Innovations and state-of-the-art technologies in the pharmaceutical industry in the production of sterile medicines

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Advance vs. simple technology

- ❑ New design or technologies e.g. RABS and isolators can provide a lot of advantages like minimize contamination risk and personnel exposure.
- ❑ More advance tech. like automation and robotics play important role toward continuous manufacturing concept, data analysis and early identification of manufacturing nonconformities.
- ❑ Relatively higher costs in the initial investment /during operation, flexibility consider limitation of the new technology.



Applications of new technologies



❖ Real-time microbial detection

Continuous real-time microbial detection and enumeration by using different kind of instruments. Such as laser-excited auto-fluorescence combined with light scattering size determination.



❖ Single-use technology

Reducing cross contamination risks, reduce processing time & improve sterility assurance.



❖ Process analytical technology (PAT)

Applied partially in the process and the environmental monitoring



01

Particle emission

The movement during operation

02

Surface Roughness

Micro-irregularities on the surface texture

03

Cleaning and Decontamination

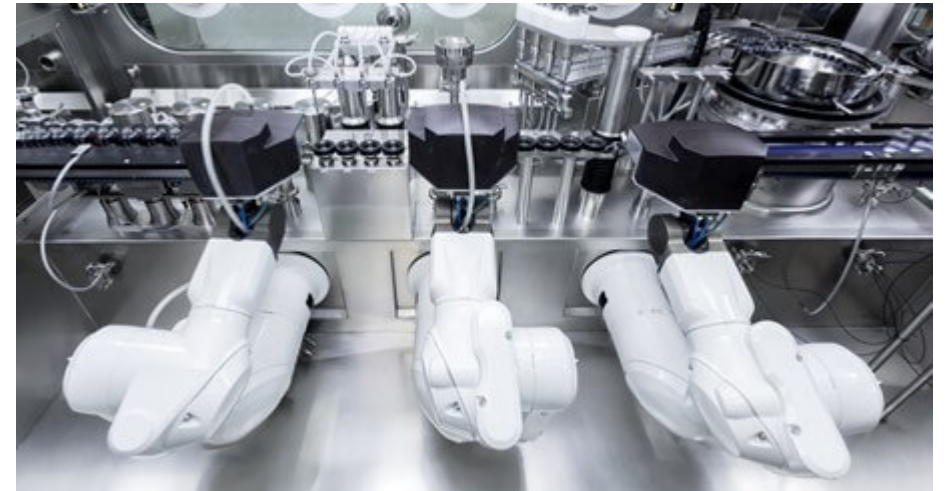
The resistance to the treatment need to be assessed.

04

Suitability

Laminar flow interruption, preventive maintenance planning ...etc.

Using Robots in sterile product filling





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