



Truking Integrated Solutions:

Process intensification and Straight Through Processing (STP) solutions for vaccine manufacturing

Truking Integrated Bio-engineering BU

We strive to achieve excellence through persistence



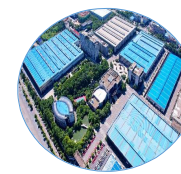
Global SSC

Service Team 180+



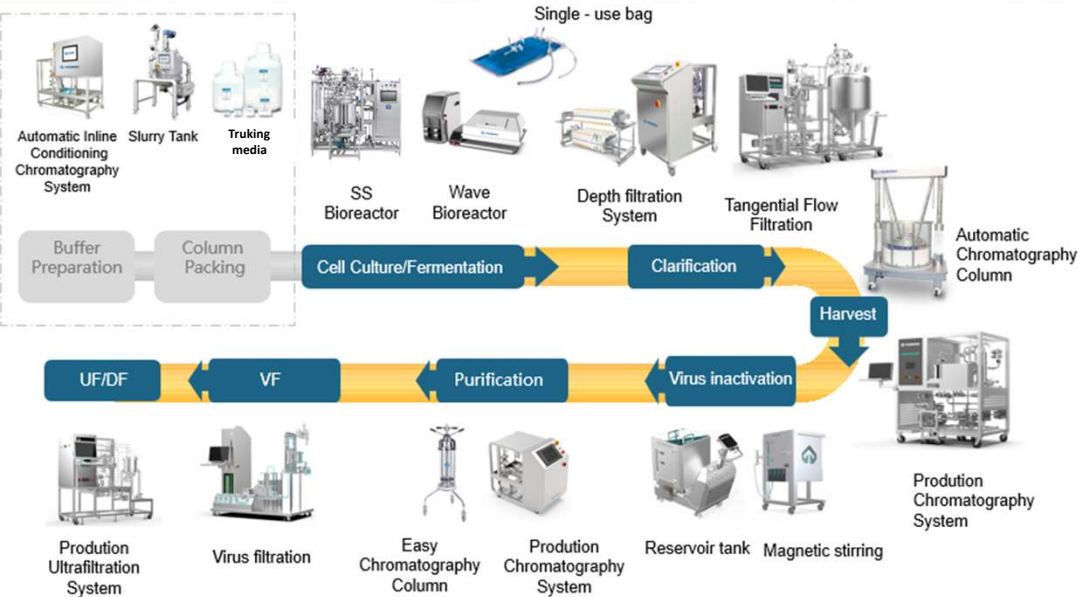
THE R&D

- The central R&D is in Changsha with 1700 engineers & scientists,
- Europe, Italy Product Development center & R&D with 300 engineers & scientists,
- Suzhou R&D with 300 engineers & scientists
- As of August 31, 2022, a total of 4342 Chinese patent applications (1028 invention patent applications, 2876 utility model patents, 438 design patents) have been filed,
- There are 2684 valid patents (468 invention patents, 1983 utility model patents, and 233 design patents)
- Another 40 PCT international patent applications were filed and 20 patent authorizations were obtained in the **United States, Russia, India, South Korea, Germany, Indonesia, Europe, and other countries.**



(Note: The above patent data include Chutian Technology, Chutian robot, Chutian Huatong, Chutian Feiyun, Chutian Huaxing, Chutian Yuanchuang, Chutian siyoute, Chutian siweikang, Sichuan Design Institute)

Integrated solutions & Equipment Systems



Truking Bio-engineering Integrated Solution:
DS + DP; USP + DSP; SS +SU System

- Empowering scientists to improve the process
- Equip the global pharmaceutical manufacturing industry with integrated solutions
- The bioengineering product of Truking concentrates on the overall solution of biopharmaceuticals. Focusing on providing customers with complete, professional, and customized biopharmaceutical core equipment and services from the entire process of R & D, and small pilot test to the commercial production
- Truking Manufacturing hub complies with all major regulatory guidelines, SUT products are well documented with BPOG guidelines

Solution Key Part: USP

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○ SU Wave Bioreactor



- Wave bioreactor with adaptive bag provisions
- Adaptive top tray for two-bag installation with full operational control

○ SU Bioreactor



- SU bioreactor with adaptive bag provisions and can retrofit to customers' present SU setup Cylindrical or Square designs

○ SS Bioreactor



- SS best in class design and fully customizable as per process needs
- Software user friendly with common interface for hazard free operations

○ DF Clarification



- Process automation with all available DF consumables
- CIP automation and SS-SU integrated products as per process demands

Solution Key Part: DSP

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SS & SU Chromatography System / Columns

- Patented combined hybrid technology of Pack-in-place
- Axial compression packing for any resin
- Four points attachment with two-pillar top adapter movement is more reliable
- Lowest maintenance time and space requirements with NO-SWING OUT mechanisms

Multi-column continuous chromatography system

- Adaptive and dynamic control of titer concentration in perfusion-fed batch Mab platform technology
- Effective utilisation of Protein A resin dynamic binding capacity without fear of losing Mab molecules

Ultrafiltration & Diafiltration SU and SS

- Multi-cassette compatible holder
- Single Use cassette operational compatibility
- Most compact designs to avoid facility revalidation

Virus removal filtration system

- Match with different virus removal filters and filtration systems
- Single-use flow path
- Single-use sensors (all market leaders)
- Automatic operation, data management, computerization



THANK YOU!