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Development of Automatic Emission Manufacturing Facility for unattended automatic inspection of Blood Collection Tube

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ABSTRACT

Because the quality of conventional blood collection tube manufacturing facility is inspected by manual or semiautomatic process. Therefore, when the patients are being checked, there are some problems that the quality is deteriorated because only some products are selected for checking using a conventional sampling method. In this study, we developed the unattended automatic inspection system for the blood collection tube including not using the conventional sampling method but it uses a high speed with constant quality method. The unattended automatic inspection system for the blood collection tube is divided into three systems: (i) major omission inspection system, (ii) tube crack inspection system, (iii) and diagnostic reagent dispensing condition check system. The major omission inspection system is a system for inspecting the blood collection tube by coordinating each palette using the sensors. The tube crack inspection system is a system, which is used for checking when the cracks occurred by pushing compressed air for checking whether pressure is maintained or not because the tube cannot function properly when cracks occur during the manufacturing process. The diagnostic reagent dispensing condition check system is an unmanned inspection system through a vision camera. Based on the tested results, it can be concluded that the unattended automatic inspection system for the blood collection tube is successfully developed.

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