Progetto ROBO-HOSPITAL

(ROBOtized platform for the management of biological samples inside HOSPITALs)

Bandi a Cascata - Programma NODES 0000036 - PNRR – M4C2 - Avviso 3277 del 30.12.2021

ROBOSAN

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Intellectual Property:

"*SYSTEM FOR THE AUTOMATED SANITIZATION O CONTAINERS FOR BIOLOGICAL SAMPLES AND ITS PROCESS OF USE*"
Priority N° 102021000009296
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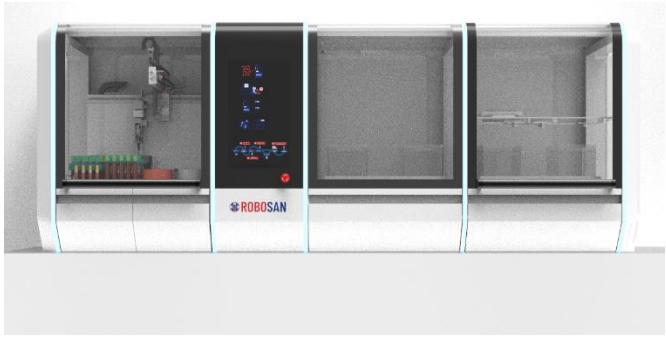
Stage of Development:

TRL: 4

Keywords:

Robotics, Laboratory, Automation



Problem:

To date, about 2% of all blood tests are affected by non-compliance errors, according to a recent review that analyzed 26 scientific articles and a total of 16M+ blood tests[1]. About 65% of these errors occur in the pre-analytical phase of analysis laboratories[2]. Considering that in Europe and the USA alone, about 22 billion blood tests are performed every year, and considering that each error costs an average of €200[3], we have about 28B€/year that are wasted due to errors in laboratory pre-analytical analysis. Thus, we have that the costs due to errors in pre-analytical analysis represent about 1% of the operating costs of a hospital.

Solution:

The ROBO-HOSPITAL project proposes the development and implementation of an integrated robotic system for managing test tubes and biological samples in the healthcare sector. The aim is to enhance the efficiency and resilience of the healthcare system, with a focus on post-blood collection test tube management inside hospitals. Key features of ROBO-HOSPITAL include precise handling, automatic tracking, efficient sanitization, secure packaging, advanced connectivity. This results in improved operational efficiency, sample security, process transparency, and error reduction. The automation of test tube management optimizes healthcare resources and ensures a more reliable service for patients, representing a breakthrough in medical care.

[1] Getawa, Solomon, et al. "Blood specimen rejection rate in clinical laboratory: A systematic review and meta-analysis." Practical Laboratory Medicine (2022): e00303

[2] Cornes M. The preanalytical phase – Past, present and future. SAGE journals. 2019. https://doi.org/10.1177/0004563219867989

[3] Sol F. Green, The cost of poor blood specimen quality and errors in preanalytical processes, Clinical Biochemistry, Volume 46, Issues 13–14, 2013, Pages 1175-1179, https://doi.org/10.1016/j.clinbiochem.2013.06.001.