



imPURE

Injection Moulding Repurposing for Medical Supplies enabled by Additive Manufacturing

MORE INFO

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PROJECT

imPURE is an Horizon 2020 funded project which aims to create medical supplies through injection moulding systems. The aim is to transform the injection moulding production lines with modular moulds including interchangeable inserts, enabled by fast Additive Manufacturing (AM) technology. Medical components will be manufactured, in particular masks, spike for vaccines and oximeters. All critical medical supplies will be produced in less than 48h, to be rapidly delivered to patients, vulnerable groups, and health care staff, due to the flexible adaptation of the modular moulds on the industrial production lines.

PROBLEM

Personal protective equipment (PPE) such as medical masks, oximeters and spike for vaccines is pivotal for the reduction of the biological hazard level that the healthcare workers are exposed during a highly diffusible pathogen outbreak such as Covid-19. Other potential non-invasive supplies required for facing pandemic caused by respiratory infectious disease are the pulse oximeters that measure the oxygen saturation (SpO2). During a pandemic outbreak, supplies are running out worldwide with consequences on the occupational infection rate, such as in the last pandemic due to Covid-19, infact WHO confirmed that the global stockpiles of PPE were insufficient.

INJECTION MOULDING REPURPOSING

imPURE is working on the repurposing of Injection Moulding production lines. Injection Moulding is one of the most commonly employed processes to massively produce plastic parts in a timely and cost-efficient way. End-use parts with tight tolerances can be produced in one step, often completely automatically and, in general, subsequent post-processing steps are not necessary.



imPURE aims to provide a systematic approach and end-to-end value chain for fast-track injection moulding line repurposing, by the development of a master die unit which can hold interchangeable cavity inserts of targeted medical consumables.



SOLUTION

imPURE project foreseen the production of CMSs such as:

MASK Personal Protective Equipment, including: Ergonomic Reusable Respirator Silicone / Elastomeric Half Masks for Healthcare Professionals.



OXIMETERS Finger pulse oximeter with integrated ceramic protective structures for electronics.



SPIKE FOR VACCINES One-way multi-draw device, indicated for use of chemotherapeutics and antiblastic



CONSORTIUM



PROJECT DETAILS

PROJECT TITLE: Injection Moulding Repurposing for Medical Supplies enabled by Additive Manufacturing

START DATE: 01/12/2020

END DATE: 31/05/2022

TOPIC: Repurposing of manufacturing for vital medical supplies and equipment

CALL IDENTIFIER: H2020-SC1-PHE-CORONAVIRUS-2020-2-NMBP

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