

Project description

Internship assignment

Student :
Start date : 1st of February 2017
Duration : 800 working hours

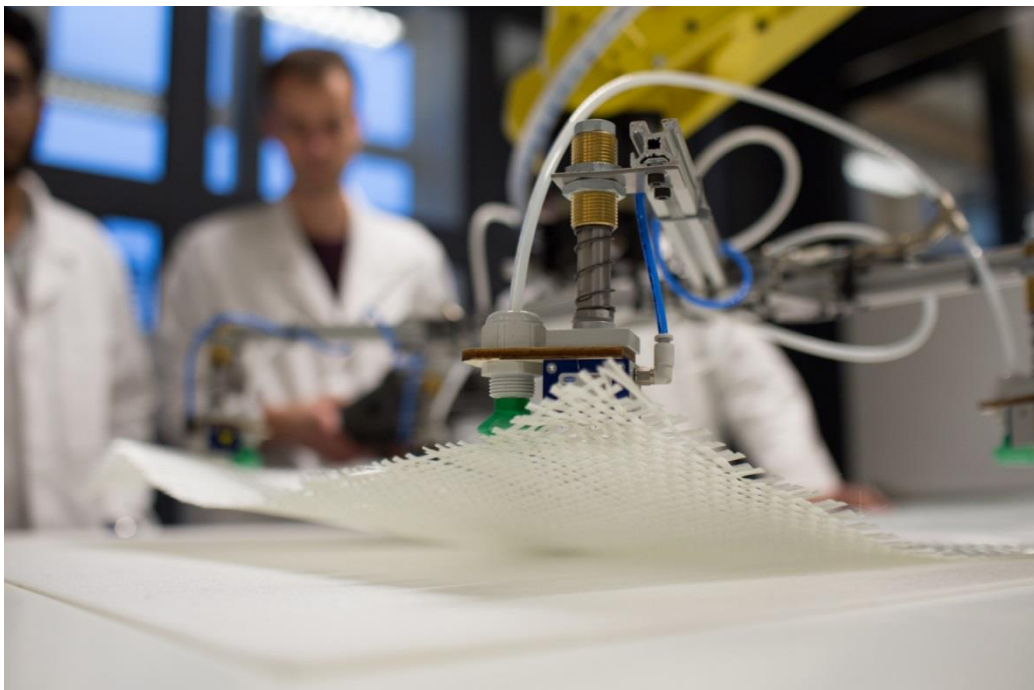
Company : Inholland Composites
Client : Inholland Composites

Date 5th of December 2016

Motivation

Inholland Composites is involved in multiple research projects in the field of composites that mainly revolve around three major themes including automation of composite production, repair of composite structures and bio-based composites. These research projects are usually carried out with partner institutes and a consortium of Small to Medium sized Enterprises (SMEs). One such project that was recently completed by Inholland Composites is the RAAK project titled "RoboCompo". This project investigated the possibilities of automation in the infusion process. As part of the project, Inholland composites delivered a demonstrator that used a robot arm to automate various steps that are typical in an infusion process.

The robot arm that was used in this project is a Fanuc-robot, which has been used by several students during the project. The robot is now placed in the laminating area of the new composites lab, but this location does not yet include fences, fixed tables, manual for the robot, etc. The demonstrator from the Robocompo project has been developed with this robot, but in order to also use the robot for other student-projects several changes need to be made to the robot and surrounding.



Goal

Professionalize the robot area and interaction with the robot in such a way that students/personnel without prior knowledge are able to safely work with the robot.

Objective

The aim is to investigate the possibilities, options and opportunities for the Fanuc robot (area) and also apply the best options in order to make the robot setup ready for new students. This will include some type of fencing with safety measures, a manual in order to (safely) work with the robot and corresponding tooling, a simulation of the robot area in the Roboguide software and other improvements.

An ideal outcome of the internship would be a practical for first and/or second year students, where the robot will be the main part of the practical

Scope of work

- Project plan.
- Literature study; research into Fanuc-robots, roboguide software, setup of the robot area; required tooling etc.
- Setting up the improvements for the robot area.
- Writing a (safety) manual.
- Simulate the robot area in Roboguide for offline programming.
- Developing a practical for first/second year students, with the robot as the main part.

Company information

Inholland Composites, located in Delft and Alkmaar, is a very well equipped, high-tech laboratory in the field of composite materials and structures. The focus is on fibre reinforced plastics which provide durable and lightweight solution in a wide range of applications. Inholland Composites has a close relationship with the Inholland Aeronautical Engineering faculty with the mission to put theory into practice and provide students with current education which connects to today's business. Additionally the Composites Laboratory does research and development for the public and private sector and provides courses for educational institutions and businesses on the use and application of composite materials.

Date: 5-12-2016
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