Post-Doctoral position
Image processing - stereovision

Nowadays, people are asking for green and sustainable products which could be recycled. In this way, paper industry is a major actor. Some key points are to reduce the basic weight of paper without decreasing the mechanical properties and also to bring to the papers some functionalities like grease barrier properties. To do that, specific layers could be deposit by coating the paper surface. With low grammage papers, some defaults appear like wrinkles and inhomogeneity of the coating layer.

Project description

DS3Dlive will focus of the 3D on-line characterisation of the paper surface and especially of the wrinkles formation during the functionalisation of low basic weight papers (cf. figure 1 where wrinkles on paper are visible).
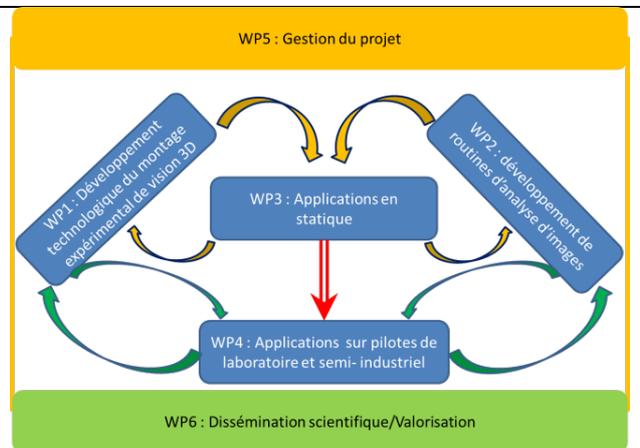

Figure 1: wrinkled paper

Figure 2: Overview of the DS3DLive project

This project is led simultaneously with a PhD thesis dealing with the understanding of the wrinkles formation on low basic weight paper during its functionalisation.

The works devolved to the candidate are (i) to set up a stereovision system which could be installed on the coating machine (RK coater) with a microscopic view of the paper and also (ii) to develop specific live image analysis treatment in order characterise the wrinkles in the 3 directions (length, high, width, orientation…).

Mains challenges are (i) a variable reflexion of the light due to rewetting and drying effects during the functionalisation, (ii) the high speed of the image processing with the use of IPDSK library, (iii) the floating moves of the paper and (iv) to take into account others industrial considerations.

Skills requirements

The candidate should have good knowledge in computer coding (python), image processing (stereo-correlation) and applied mathematics. Furthermore, she/he must be interested by practical work especially for the set-up of the stereovision system which have to be developed. In order to communicate with all partners of this project and to read and write articles, she/he should be fluent in english with reading and writing capabilities.

Fast and good adaptabilities are also required.

Practical information

> Duration: 18 months
>
> Beginning: November/December 2020
>
> Salary: ~2400 €/month gross salary
>
> Location: LGP2 laboratory (Grenoble, France, https://pagora.grenoble-inp.fr/fr/recherche)
>   + short missions at partners facilities.

Want to apply?

Send to celine.martin@grenoble-inp.fr and raphael.passas@grenoble-inp.fr a CV, a motivation letter, at least one recommendation letter, 1 (or more) article and/or PhD manuscript.