Title: **Monitoring and control of blending processes of pharmaceutical products by near infrared (NIR) hyperspectral imaging.**

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Date: 06/2019
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The pharmaceutical industry, one of the industries with the greatest impact and influence in the world, whose progress directly affects the quality of life of the people, usually works with automated processes when mixing and encapsulating powdered substances. This aspects needs to be controlled somewhat dangerous since the lack of homogeneity of a mixture when encapsulating leads to the production of products whose composition we do not control accurately, and maybe due to an increase or deficit of the active principles or excipients that they contain, producing substances that are innocuous or even dangerous.

In this work we will study a method to qualitatively assess mixture quality of pharmaceutical substances in the form of powder. Those mixtures will contain: Acetylsalicylic acid(AAS) and caffeine as active principles and starch or cellulose as excipients. Our intention with these mixtures is to emulate the composition of the CafiAspirina and to make different tests to see how the composition affects at the mixture quality due to it's different physical properties. For this study we will use a near-infrared (NIR) imaging system and some chemometric tools to finally evaluate the quality of the mixture, based specifically on the use of variograms.