Rapid Assessment of Tablet Film Coating Quality by Multispectral UV Imaging - DTU Orbit (09/11/2017)

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Chemical imaging techniques are beneficial for control of tablet coating layer quality as they provide spectral and spatial information and allow characterization of various types of coating defects. The purpose of this study was to assess the applicability of multispectral UV imaging for assessment of the coating layer quality of tablets. UV images were used to detect, characterize, and localize coating layer defects such as chipped parts, inhomogeneities, and cracks, as well as to evaluate the coating surface texture. Acetylsalicylic acid tablets were prepared on a rotary tablet press and coated with a polyvinyl alcohol-polyethylene glycol graft copolymer using a pan coater. It was demonstrated that the coating intactness can be assessed accurately and fast by UV imaging. The different types of coating defects could be differentiated and localized based on multivariate image analysis and Soft Independent Modeling by Class Analogy applied to the UV images. Tablets with inhomogeneous texture of the coating could be identified and distinguished from those with a homogeneous surface texture. Consequently, UV imaging was shown to be well-suited for monitoring of the tablet coating layer quality. UV imaging is a promising technique for fast quality control of the tablet coating because of the high data acquisition speed and its nondestructive analytical nature.

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