

S12-3 **Physicochemical properties and product quality of pharmaceutical preparations based on chemometrics by nondestructive analysis**

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In order to make high quality of pharmaceutical products it is required that physicochemical properties of raw powdered materials and variable factors of manufacturing processes are completely controlled. With the introduction of guidelines for process analytical technology (PAT) by the Food and Drug Administration, on-line, real-time analyses as a tool for monitoring and controlling quality of pharmaceutical products in manufacturing processes have become increasingly accepted in the pharmaceutical industry. Near infrared spectroscopy, Raman and X-ray analysis are useful tools for PAT, since those can measure drug and/or polymorphic content, tablet hardness and dissolution rate of sample preparations with non-contact and non-destruction. Chemometrics is necessary tool to extract objective data from complicated spectral data. In present study, I will discuss case studies concerning to prediction of polymorphic content, tablet hardness and dissolution rate of pharmaceuticals by combination of non-destructive method and chemometrics.