Application Note RACCT9037

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Aspirin Tablet Coating Delamination Imaging by X-ray CT

About the sample: Aspirin tablets

Aspirin (ASA: acetylsalicylic acid) is used to reduce pain, fever, or inflammation. Aspirin tablets are often enteric-coated. The coating prevents the tablet from dissolving in the stomach and cause bleeding, but it dissolves in the small intestine instead. The coating should be uniform, fully covering the tablet without cracks or delamination. X-ray CT (computed tomography) can visualize these tablet coatings non-destructively.

Analysis procedure

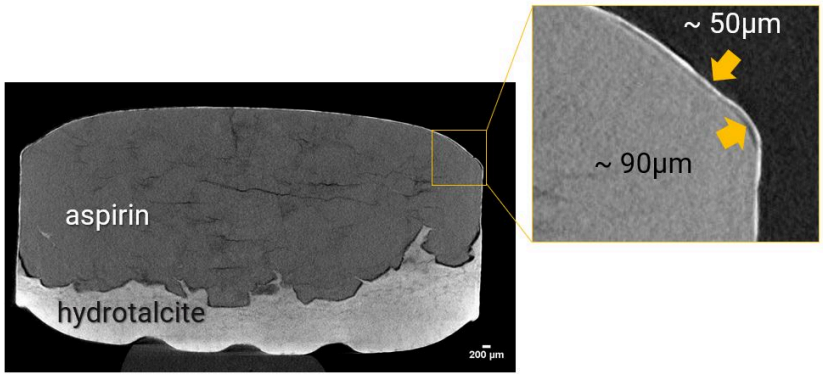
1. In this example, an aspirin tablet was scanned using a submicron-resolution CT scanner, nano3DX.
2. The coating thickness was evaluated from the CT image.

1. CT scan

An enteric-coated aspirin tablet was scanned to produce the 3D grayscale CT image. The aspirin and hydrotalcite layers are clearly observed.

2. Coating evaluation

The gray level in CT data (left) represents the relative density. The coating has a higher density than aspirin and appears white in the image while the air appears dark. Under the 50 microns thick coating, about a 90 microns wide gap is seen at the corner of the tablet indicating the coating is delaminated.



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