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Chocolate Candy Coating Analysis by X-ray CT

About the sample: Chocolate candies

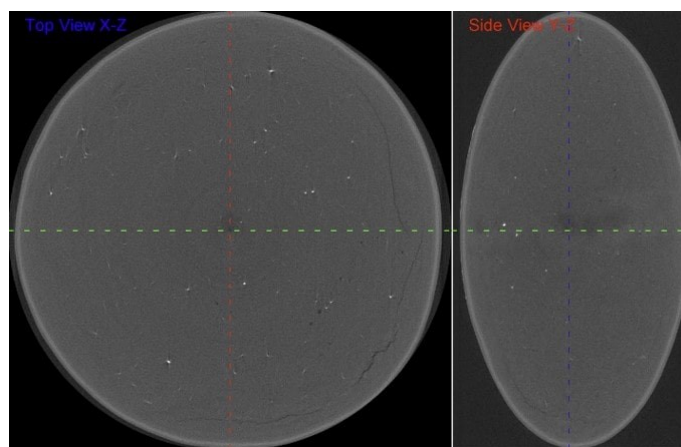
There are many types of chocolate candies. Chocolate is the main component, but they can include other components, such as nuts, caramel, and sugar coatings. X-ray CT ([computed tomography](#)) can be used to analyze the coating thickness distribution.

Analysis procedure

1. In this example, a sugar-coated chocolate candy was scanned using a submicron-resolution CT scanner, [nano3DX](#).
2. The resulting image was used to [segment](#) the sugar coating.
3. The sugar coating thickness distribution was analyzed.

1. CT scan

A sugar-coated chocolate candy was scanned to produce the 3D grayscale CT image. The top and side view cross-sections are shown in the figure. The gray levels represent the density of materials. Air (cracks and voids) appears black. The sugarcoating is light gray while the chocolate is slightly darker gray. The salt grains are also seen as white dots.

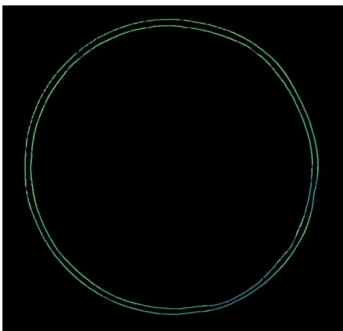
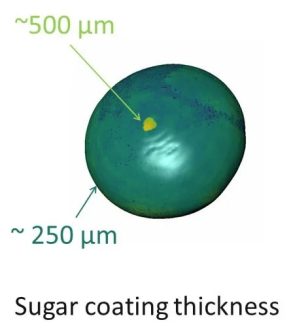


2. Segmentation

The sugar coating was segmented using [thresholding](#) and converted into a [surface mesh](#).

3. Thickness distribution analysis

The coating thickness is color-coded in the figure. Thin areas of about 200 microns are shown in blue and the thick areas of about 300 microns are in green. The center of the candy is yellow, indicating that this part is about 500 microns thick.



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nano3DX

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