Studying Mechanical and Conductive Properties of Caramel

Abstract

When conducting any sort of research, our end goal mostly remains consistent. We set out to analyze a conceptual or physical problem with the hopes to gain a better understanding by the end of it.

Caramel, outside of the food industry, hasn’t really seen any other pragmatic uses. Mostly because of the lack research. Therefore, our objective was to analyze the mechanical and conductive properties of caramel to see whether we could find some potential alternative uses. One particular goal we set out was to see whether it would be possible to produce caramel nanofibers, so it could be used for something like drug delivery. We have used electron spin resonance (ESR) to test the conductivity of the caramel, nanoindentation for its mechanical properties, and finally the atomic force microscope (AFM) to test the mechanical properties of the nanofibers.