

- **Assessment of acoustic-mechanical measurements for crispness of wafer products**

Authors: E. Carsanba, K. Dürschmid, G. Schleining

Abstract:

The objective of this work was to investigate instrumental tests regarding the capacity to differentiate crispy wafer products of different quality and regarding to correlations between instrumental parameters and sensory descriptors. Therefore two fracturing methods, a 3-point bending and a cutting test with simultaneously recorded sound emissions and a descriptive sensory analysis were carried out with nine different brands of wafers representing different qualities.

The results showed that both instrumental methods are capable to differentiate products of different quality, but in different ways. Only the maximum sound pressure ($r = 0.89$) and the number of force peaks ($r = 0.83$) of both tests correlate. The sensory descriptor “crispness” was mainly correlated with the area under sound-displacement curve ($r = 0.76$) and mean sound value ($r = 0.59$) of the cutting test, and weakly related to the number of force peaks ($r = 0.42$), the maximum sound pressure ($r = 0.50$) and the area under sound-displacement curve ($r = 0.42$) of the 3-point bending test.

Link: <https://www.sciencedirect.com/science/article/pii/S0260877417304739>