Contribution ID: **62**   Type: **not specified**

Energy-resolved X-ray imaging and contrast enhancements in CZT detectors for contaminant detection.

Wednesday, 21 June 2023 17:00 (20 minutes)

Recently, in the framework of the AVATAR X project (funded by the Italian Ministry for University and Research), we developed energy-resolved photon counting (ERPC) X-ray scanners based on CZT detectors for contaminant detection in food industry. In this work, we will present the results from the analysis of energy-resolved X-ray images from CZT linear array detectors. The key steps of image processing and energy-resolved analysis in contrast-to-noise ratio (CNR) enhancements will be discussed. The benefits of a new energy-resolved X-ray imaging approach, termed window-based energy selecting, in the detection of low and high density contaminants are also shown.

Summary

Primary authors: Dr TAORMINA, Vincenzo (University of Palermo); Dr BUTTACAVOLI, Antonino (University of Palermo Department of Physics and Chemistry "E. Segrè"); Prof. CASCIO, Donato (University of Palermo); Prof. PRINCIPATO, Fabio (University of Palermo); Prof. RASO, Giuseppe (University of Palermo); BETTELLI, Manuele (IMEM/CNR Parma); ZAPPETTINI, Andrea (IMEM/CNR Parma); Prof. ABBENE, Leonardo

Presenter: Dr TAORMINA, Vincenzo (University of Palermo)

Session Classification: X-ray detectors