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Raman spectroscopic detection of bread mold SATYENDRA KUMAR MISHRA[1], INDRA GHIRMIRE, ZACK LIEGE[2], DIMITRI VORNONINRE[3], ALEXEI V. SOKOLOV[4], HO WAI HOWARD LEE[5], MARLAN O. SCULLY[6], Baylor University — We present an application of Raman spectroscopy for the rapid characterization and identification of individual mold from several species of microfungi. We show the acquisition of unique Raman spectral signatures of bread mold under different growth conditions. The distinct emission peaks from the Raman spectra provide detailed insight into the overall chemical composition of the mold. We compare our results with those of clean bread and determine the detection limit of the mold measurements. In our study, we use 532 nm CW laser for non-resonant Raman scattering. The Raman spectra of mixture of 1 gram of bread mold in water filled in cuvette is recorded in reflection configuration. The presented results of mold detection will find applications in various fields such as agricultural photonic science, public health, biophotonics, and environmental microbiology.

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