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(54) **IN-OVEN CAMERA AND COMPUTER VISION SYSTEMS AND METHODS**

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(57) **ABSTRACT**

Systems and methods include a cooking appliance comprising a heating element disposed within a cooking chamber and operable to selectively emit waves at any of a plurality of powers and/or peak wavelengths, a camera operable to capture an image of the cooking chamber, and a computing device operable to supply power to the heating element to vary the power and/or peak wavelength of the emitted waves and generate heat within the cooking chamber, and instruct the camera to capture the image when the heating element is emitting at a stabilized power and/or peak wavelength. The computing device is operable to generate an adjusted captured image by adjusting the captured image with respect to the stabilized power and/or peak wavelength. The computing device comprises feedback components operable to receive the adjusted captured image, extract features, and analyze the one or more features to determine an event, property, measurement and/or status.