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(54) Title: METHOD AND SYSTEM OF DETERMINING CONSTITUENT COMPONENTS OF A FLUID SAMPLE

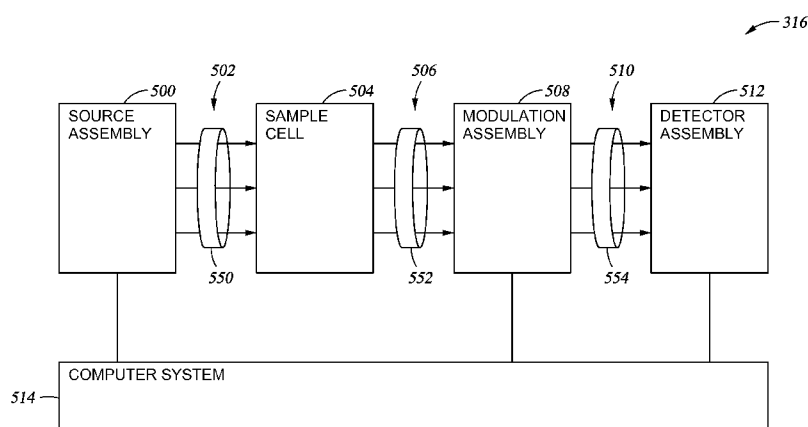


Fig. 5

(57) Abstract: Determining constituent components of a fluid sample. At least some of the illustrative embodiments are methods including: creating electromagnetic energy with a wavelength in the infrared region; directing the electromagnetic energy into a fluid sample; modulating the electromagnetic energy at a modulation frequency; directing the electromagnetic energy that passes through the fluid sample to a first resonant chamber, the first resonant chamber has an acoustic resonant frequency substantially equal to the modulation frequency; absorbing at least a portion of the electromagnetic energy by a detector fluid within the first resonant chamber; detecting acoustic energy within the first resonant chamber; and determining a first constituent component of the fluid sample based on the acoustic energy within the first resonant chamber.