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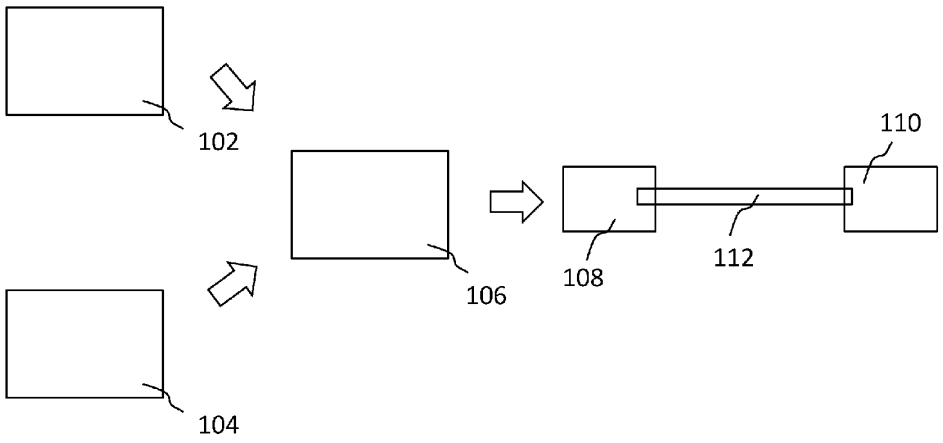
(54) **Title:** SYSTEM FOR GENERATING MID-INFRARED LIGHT AND METHOD OF FORMING THE SAME

FIG. 1



(57) **Abstract:** Various embodiments may relate to a system for generating a mid-infrared (MIR) light. The system may include a first laser source configured to provide an infrared light having a wavelength selected from a range from 1 μm to 2.5 μm, a second laser source configured to provide a further light having a wavelength shorter than the wavelength of the infrared light, and an optical element configured to combine the infrared light and the further light into a combined light. The system may also include a first gas cell and a second gas cell configured to hold a gas, and a hollow core fiber (HCF) in fluidic communication with the first gas cell and the second gas cell. The hollow core fiber when filled with the gas may be configured to emit the mid-infrared (MIR) light in response to the combined light being provided to the hollow core fiber.

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