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(54) Title: AN IMAGING SYSTEM AND A LIGHT ENCODING DEVICE THEREFOR

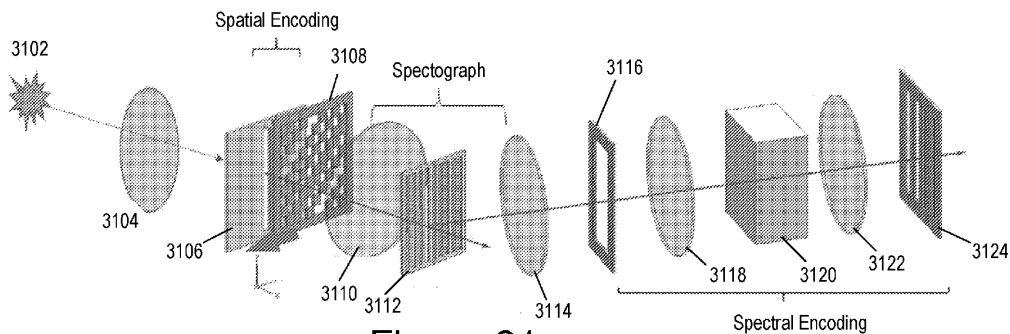


Figure 31a

(57) Abstract: A spectral imaging system comprises: a spatial encoder comprising a first light encoding device comprising a first mask for spatial encoding, the first mask being configured with one or more encoding patterns; a spectral encoder comprising: a dispersion arrangement for splitting spatially encoded light from the first light encoding device into a plurality of components; and a second light encoding device comprising a second mask for spectral encoding of the plurality of components, the second mask having one or more encoding patterns; and at least one single-pixel photodetector positioned to measure light that is encoded by the masks. The spatial encoder is operable to spatially encode light by generating a sequence of different patterns or partial patterns of the one or more encoding patterns of the first mask. The spectral encoder is operable to spectrally encode light by relative movement between the dispersion arrangement and the second mask.

[Continued on next page]

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