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(54) **PARALLELIZED MAGNETIC SENSING OF SAMPLES USING SOLID-STATE SPIN SYSTEMS**

(57) Disclosed herein is a sensor chip for parallelized magnetic sensing of a plurality of samples, a system for parallelized magnetic sensing of a plurality of samples and a method for probing a plurality of samples using optically addressable solid-state spin systems. The sensor chip comprises an optically transparent substrate comprising a plurality of optically addressable solid-state

spin systems arranged in a plurality of sensing regions in a surface layer below a top surface of the substrate. The sensor chip further comprises a plurality of sample sites, wherein each sample site is arranged above a respective sensing region. The sensor chip has a light guiding system configured to provide an optical path through the substrate connecting each of the sensing regions.

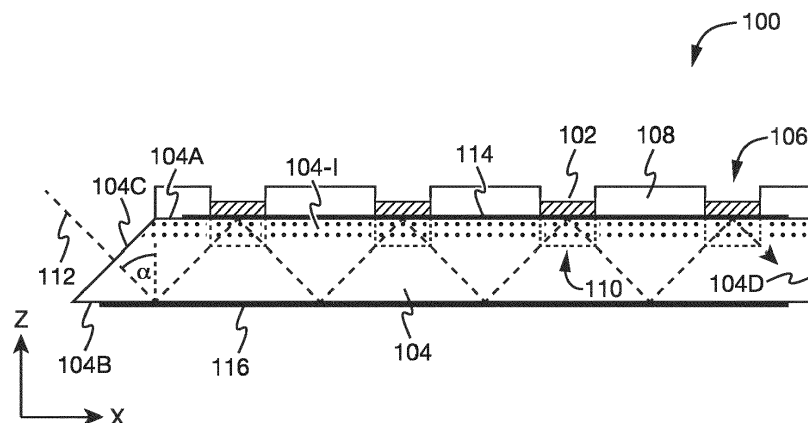


Fig. 1