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(54) **Title:** PHASED-ARRAY BEAM STEERING FOR MATERIALS PROCESSING

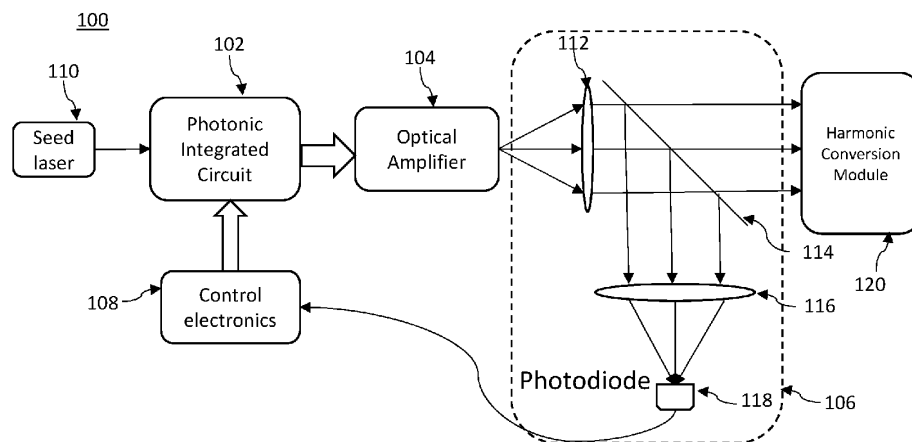


FIG. 1

(57) **Abstract:** A system includes a multi-channel beam splitter arranged and configured to split an input optical signal into a plurality of split optical signals; a plurality of phase modulators, wherein each phase modulator of the plurality of phase modulators is operative to modify a phase of a corresponding split optical signal of the plurality of split optical signals in response to a control signal; a waveguide arranged at an optical output of the plurality of phase modulators, the waveguide configured to spatially-rearrange the split optical signals output from the plurality of phase modulators into a pattern, thereby producing an optical signal pattern; and an optical amplifier arranged at an optical output of the waveguide, wherein the optical amplifier is configured to amplify the optical signal pattern produced by the waveguide.

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