

ABSTRACT

POLARIZATION ROTATOR

5 A polarization rotator including a plurality of polarizer layers that are stacked along a
general direction of radiation propagation. Each polarizer layers implements a wired
grid pattern associated with respective extinction axis for extinction of radiation
components that are polarized therealong. The extinction axes of consecutive polarizer
layers are orientated differently so that polarization of radiation interacting therewith is
10 rotated. The relative orientations of the polarizer layers are selected such that a tiling of
a plurality of substantially identical polarization rotation unit cells is defined within the
polarization rotator, where the unit cells are arranged with predetermined spatial periods
 A and B along two lateral axes. The polarization rotator may be coupled to an array of
elements (e.g. antennas) arranged parallel to the tiling of unit cells, with respective
15 spatial periodicities A' and B' that are integer multiples of the predetermined spatial
periods A and B of the unit cells.

Fig. 1