TITLE OF INVENTION: DESIGN METHOD AND SYSTEM FOR DOT-MATRIX VECTOR PATTERNS AND COLORED PHOTOVOLTAIC MODULES, AND COLORED PHOTOVOLTAIC MODULES

ABSTRACT

The present invention discloses a method for designing a dot vectorized pattern applied in a colored photovoltaic module, a colored photovoltaic module and a design method therefor, and a design system. The design method for the dot vectorized pattern converts any specified image into a dot vectorized pattern that meets energy conversion efficiency and resolution requirements. The colored photovoltaic module comprises the dot vectorized pattern, which includes a plurality of reference dot vector units, and each reference dot vector unit includes a reference pattern formed by a plurality of isolated dots arranged in a specific arrangement to create different styles with different visual effects. Gaps between the isolated dots allow more sunlight to penetrate to the underlying photovoltaic (PV) cells, thereby optimizing energy harvesting. This not only ensures the energy conversion efficiency of the colored photovoltaic module but also ensures that all cells receive uniform solar irradiance, effectively mitigating the hot spot effect commonly found in BIPV modules.

[FIG. 1]