

ABSTRACT

Provided are a heterojunction solar cell coating apparatus, method and system, a solar cell, a module, and a power generation system. The heterojunction solar cell coating apparatus is configured for amorphous silicon-based film deposition, and comprises a loading cavity (1), a preheating cavity (2), intrinsic process cavities (3), doping process cavities (4) and an unloading cavity (5) that are linearly arranged in sequence, the cavities being isolated from each other by means of an isolating valve (9). At least two intrinsic process cavities (3) are provided and are configured for deposition by means of an intrinsic layer silicon film process; and at least one doping process cavity (4) is provided and is configured for deposition by means of an N-type silicon film or P-type silicon film process. The preheating cavity (2) comprises a heating preheating chamber and a preheating buffer chamber that is configured for adjusting the gas and pressure atmosphere. The apparatus combines control over the gas proportion and the pressure, can process a plurality of solar cells at the same time, and improves the overall processing efficiency.

Fig. 3