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**ABSTRACT**

A heater includes a base body; an infrared electric heating film, formed on a surface of the base body, the infrared electric heating film including doped tin oxide and doping elements of the doped tin oxide including non-metal elements; and the infrared electric heating film being configured to generate infrared ray and heat the aerosol-forming substrate at least in a radiation manner; and a conductive portion, including a first electrode and a second electrode arranged on the base body, and both the first electrode and the second electrode being electrically connected to the infrared electric heating film to feed electric power of a power supply to the infrared electric heating film. An infrared electric heating film including doped tin oxide is formed on a base body, and doping elements of the doped tin oxide facilitate to improve conductive performance and infrared radiation efficiency of the infrared electric heating film.

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