

ABSTRACT

The present disclosure provides a radiative cooling metal plate, a preparation method and application thereof. The radiative cooling metal plate includes a metal substrate, a first adhesive layer and a radiative cooling functional layer stacked in order, the radiative cooling functional layer is located on a surface of the metal substrate, the first adhesive layer is arranged between the metal substrate and the radiative cooling functional layer, and an elongation at break of the radiative cooling functional layer is in a range of 1% to 300%. The radiative cooling functional layer can have sufficient ductility, and can have sufficient deformation to cope with the bending of the radiative cooling functional layer during pressing, such that the radiative cooling functional layer will not be damaged or broken, thereby ensuring the structural integrity of the radiative cooling functional layer and great radiative cooling effect of the metal substrate. When the radiative cooling metal plate is applied, the indoor air temperature of a building can be decreased by about 5 degrees centigrade to 10 degrees centigrade without energy consumption than when the radiative cooling metal plate is not used.

Figure 1