

**SOLAR WATER HEATING AUXILIARY HEAT STORAGE DEVICE AND
POWER PLANT BOILER SOLAR WATER HEATING SUPPLY SYSTEM
FORMED THEREOF**

ABSTRACT

A solar water heating auxiliary heat storage device and a solar water heating supply system of a power plant boiler (1), the solar water heating supply system being formed of the solar water heating auxiliary heat storage device. The solar water heating auxiliary heat storage device comprises at least one molecular sieve heat storage bed (18) and a heat storage water tank (17). The molecular sieve heat storage bed (18) comprises a cylindrical heat storage bed outer casing (18.1), and several heat storage tubes (18.5) are provided within the heat storage bed outer casing (18.1). Each heat storage tube (18.5) is formed of a metal tube (18.5.1) having a mesh and an adsorbent layer (18.5.2) attached to a surface of the metal tube (18.5.1) having the mesh, and is used for heat storage. An adsorbent material in the adsorbent layer (18.5.2) is a molecular sieve adsorbent material capable of pairing with water to act as a working medium pair. The system makes full use of solar energy as a supplementary fuel of the power plant boiler (1), normal operation of the boiler (1) is not affected by instability, intermittency, etc. of the solar energy, and power plant costs are significantly reduced.

FIG. 1