CLAIMS

1. A solar air conditioning system, the system comprising:

a solar collector configured to heat and compress working fluid to a predetermined temperature and a predetermined pressure;

a compressor downstream from the solar collector, the compressor including at least one sensor configured to determine temperature and pressure of the working fluid for determination of a work load of the compressor;

an evaporator, the solar collector being located between the compressor and the evaporator,

wherein the work load of the compressor is reduced when the at least one sensor determines the temperature and pressure of the working fluid to be the predetermined temperature and the predetermined pressure respectively as the solar collector compensates for the reduced work load of the compressor, and wherein the predetermined temperature and pressure is dependent on an amount of solar energy harvested at the solar collector.

2. The system of claim 1, wherein the solar collector includes a plurality of u-shaped copper pipes sheathed with evacuated glass tubes, the copper pipes being for passage of the working fluid.

3. The system of claim 2, wherein the solar collector is configured to carry out heat absorption and compression via the copper pipes, and ambient heating via the evacuated glass tubes.

4. The system of any of claims 1 to 3, wherein the greater the amount of harvested solar energy, the higher the predetermined temperature.

5. The system of any of claims 1 to 3, wherein the greater the amount of harvested solar energy, the higher the predetermined pressure.

6. The system of any of claims 1 to 5, further including a flow regulator upstream from the solar collector.

7. A method for conditioning air, the method comprising:

removing, in an evaporator, ambient heat;

heating and compressing, in a solar collector, working fluid to a predetermined temperature and a predetermined pressure; and

determining, using at least one sensor in a compressor, a temperature and a pressure of the working fluid;

wherein the work load of the compressor is reduced when the at least one sensor determines the temperature and pressure of the working fluid to be the predetermined temperature and the predetermined pressure respectively as the solar collector compensates for the reduced work load of the compressor, and wherein the predetermined temperature and pressure is dependent on an amount of solar energy harvested at the solar collector.