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A solar-thermal cooker using high-pressure steam for heat transfer

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Abstract content
   (Max 300 words)

A solar-thermal cooker was constructed and tested at the Westville Campus of the University of KwaZulu-Natal. The system comprises an off-axis parabolic dish with reflective film, a receiver and a thermal energy storage. The dish tracks the sun using a light-sensing device. The receiver is a rounded, cylindrical steel chamber connected to a closed pipe loop that passes through a storage vessel containing solar salt. The concept is that when solar radiation is concentrated on the receiver by the dish, water in the receiver is converted to high-pressure, high-temperature steam that serves as heat transfer fluid. At sufficiently high temperature the solar salt melts, thereby adding extra energy storage capacity. We present experimental results.

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