DEVELOPMENT OF SOLAR ENERGY BASED TURPENTINE OIL PLANT

Introduction
Pine Resin is tapped and collected from pine trees in the Himalayan region.

Turpentine Oil Plant and Manufacturing Process
• Stainless steel tank is used for melting the raw material (Resin) up to 80°C followed by heating the same at 200°C using wood fuel in the distillation tank for extraction of Turpentine Oil and Rosin.
• The existing manufacturing process of turpentine oil production is integrated with solar parabolic dish with the objective of reducing the wood requirement partially or completely.
• In modified plant, thermic fluid which receives heat from parabolic dish through receiver is used to transfer the heat to the existing system.

Fuel Requirement in Solar Energy based Turpentine Oil Plant
• Wood Fuel Required in Processing of 1kg Resin \( (m_f) = 0.44 \text{kg} \)
• Amount of wood saved for 1kg processing of resin = 77 gm
• It is found that almost 17.5% amount of wood fuel can be reduced to process resin value of 1Kg when solar power is integrated with existing plant.