

Molten salt solarthermic Power Plants - A new challenge for nickel alloys

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Solarthermic power plants are a regenerative power source, which produce electricity by a conventional steam turbine. The focusing technique of solar radiation defines the principle plant system i.e. Solar Tower, Parabolic trough and others. The transportation and storage of the heat has to be performed with heat storage media, which can be thermooile, water and molten salts. Due to its high heat capacity, molten salts i.e. nitrates are currently the media of choice for future solar systems. The hot molten salt, however, has to be transported through a metallic tube transport system which has to stable at temperatures up to 660 °C. Nickel alloys are currently under investigations and the paper will report on current and past investigations on the stability and usage of nickel-alloys in comparison with other materials. It turned out that for the hottest part of solarthermic power plants, nickel alloys are currently the best choice.