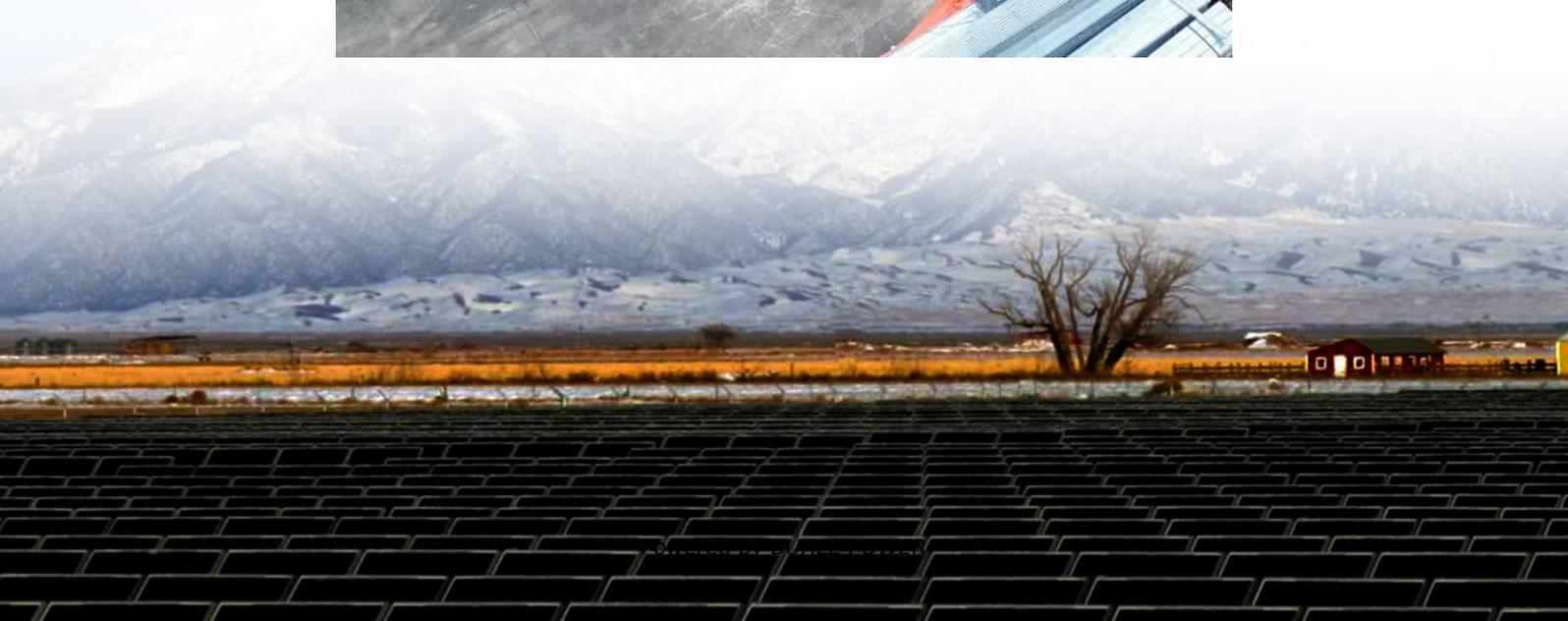


# Energy storage device charges and discharges simultaneously





## Overview

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A latent thermal energy storage system may operate under a simultaneous charging and discharging condition due to the mismatch between intermittent renewable energy supply and unpredictable ener.

Do TES systems need to be charged and discharged simultaneously?

To avoid frequent switches between the charging/discharging mode and to keep a continuous operation, TES systems need to be charged and discharged simultaneously. However, the work on the cases of simultaneous charging and discharging (SCD) process receives attention in just recent 15 years and is still inadequate.

Can simultaneous charging and discharging process be used in heat exchangers?

However, the work on the cases of simultaneous charging and discharging (SCD) process receives attention in just recent 15 years and is still inadequate. To the authors' best knowledge, Liu et al. studied an SCD process in a heat pipe heat exchanger with PCM in 2006.

Does a latent thermal energy storage system have thermal performance?

Conclusion The thermal performance of a latent thermal energy storage system is experimentally investigated during the simultaneous charging and discharging process.

What is the balanced charging/discharging power?

The balanced charging/discharging power is approximately 52 W. By comparison of Fig. 6 and Fig. 8 (b), it can be seen that the balanced power is still lower than that under the equal flow rate. It is noted that the initial charging power decreases to approximately 130 W, owing to the reduction of the charging flow rate.



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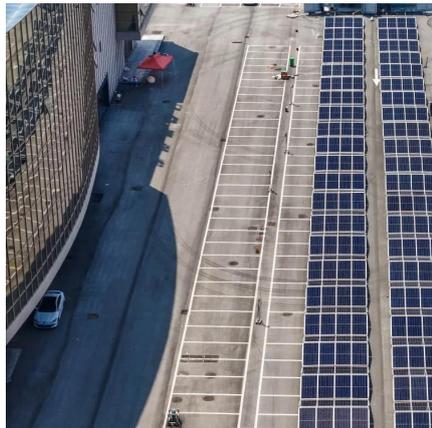
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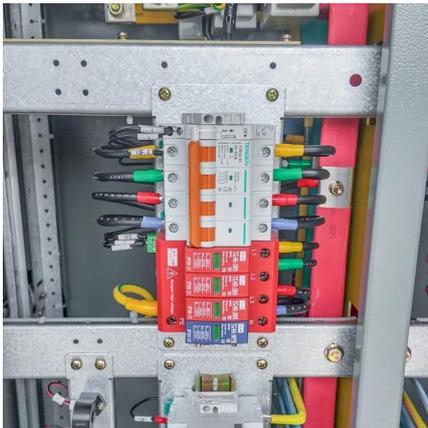
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