

Flexible Power Generation – ETN Webinar Series – 4th episode

PUMP-HEAT

Innovative concept to increase flexibility of combined cycle power plants
and gas turbines

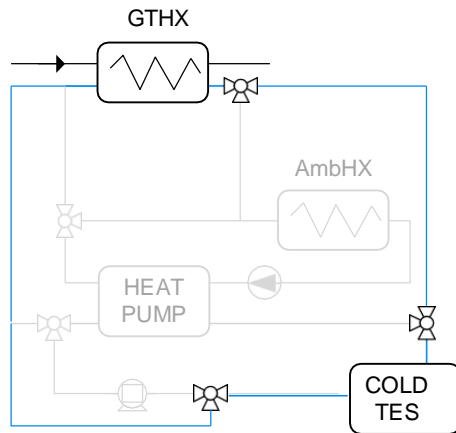
Tuesday, January 12, 2020 • 12:00am – 01:00 pm

Development of Thermal Storage Materials for CCGT

Speaker: Assist. Prof. Dr. Justin NW Chiu
KTH Royal Institute of Technology
H2020 Pump Heat WP3 Leader

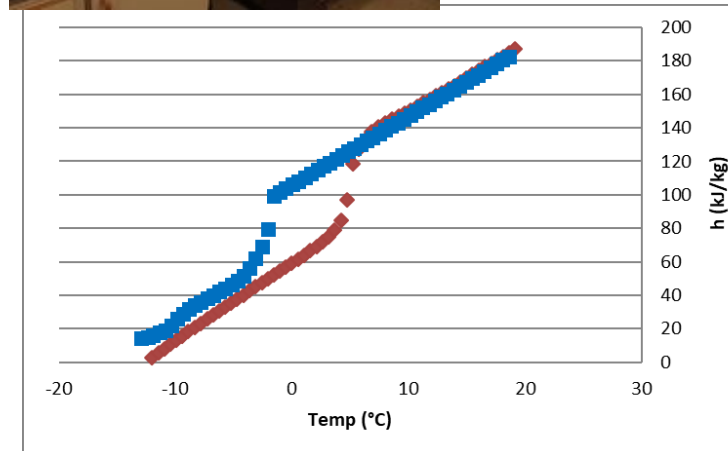
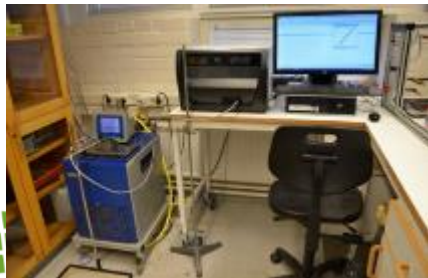
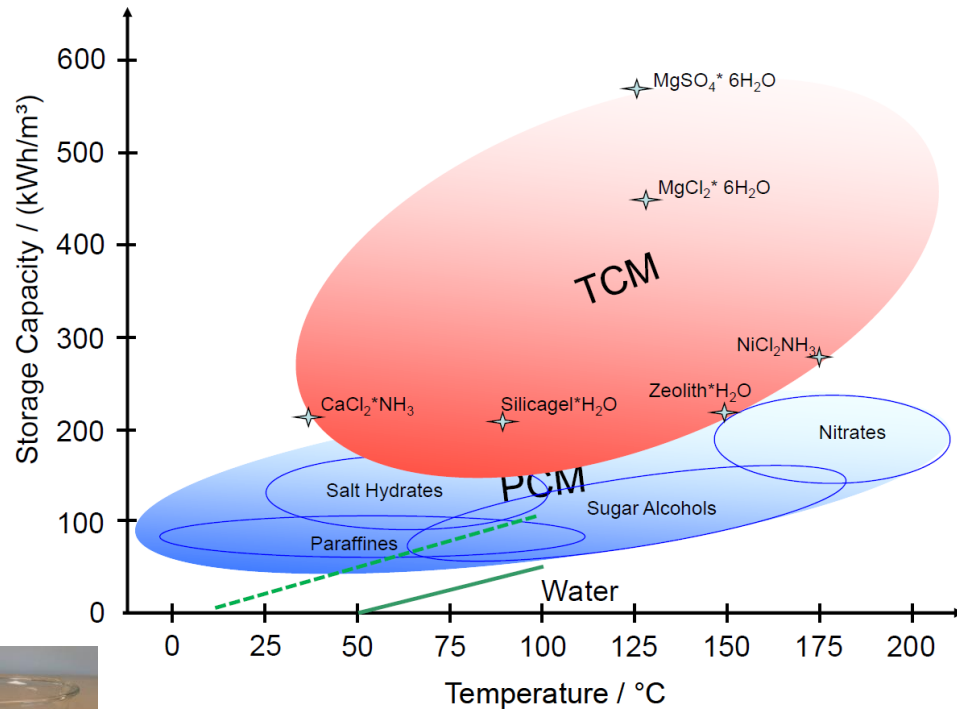


Discharging Cold TES

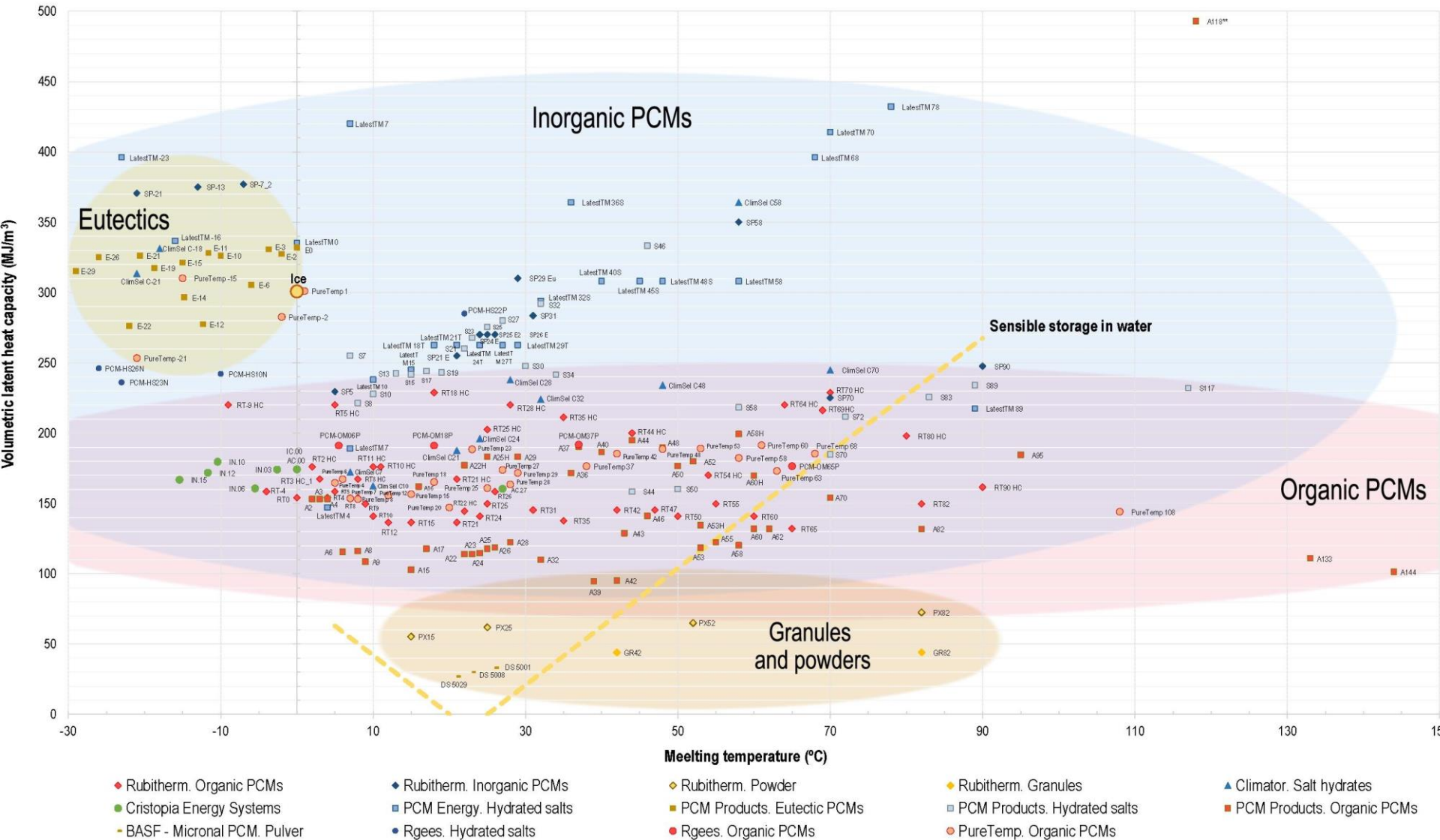
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- Pre-cooling the air during peak-price hours
- Storing cold energy during off-peak periods

Choosing the Right Storage Materials

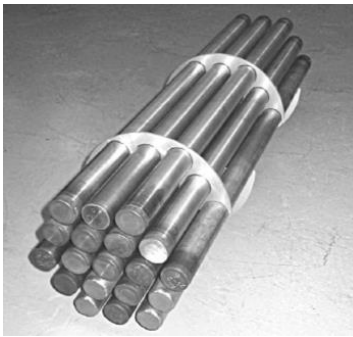


Available Phase Change Materials for building applications

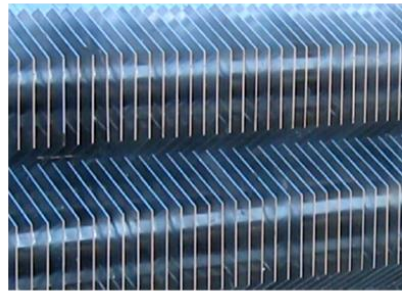


Thermal Energy Storage Heat Exchanger Design

- Submerged



(a)



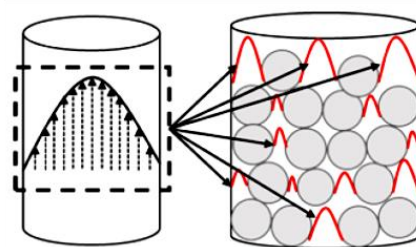
(b)



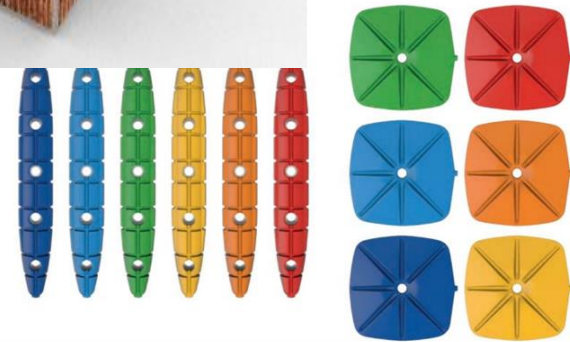
- Encapsulated



(a)

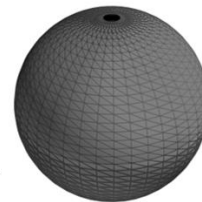


(b)

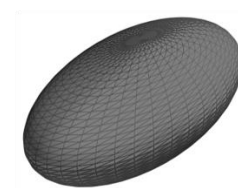


(a) HeatStixx

(b) HeatSel



(i)



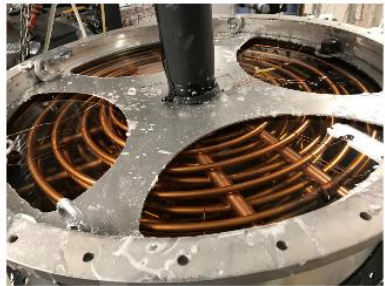
(ii)



(iii)



Storage Unit Performance Testing



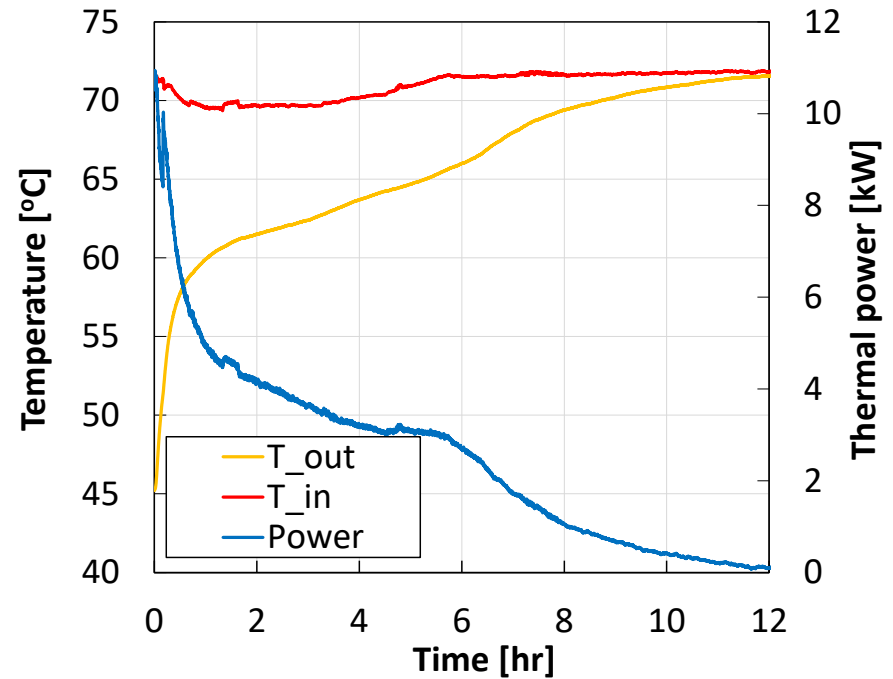
(a)



(b)



(c)



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Thank you for your attention

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