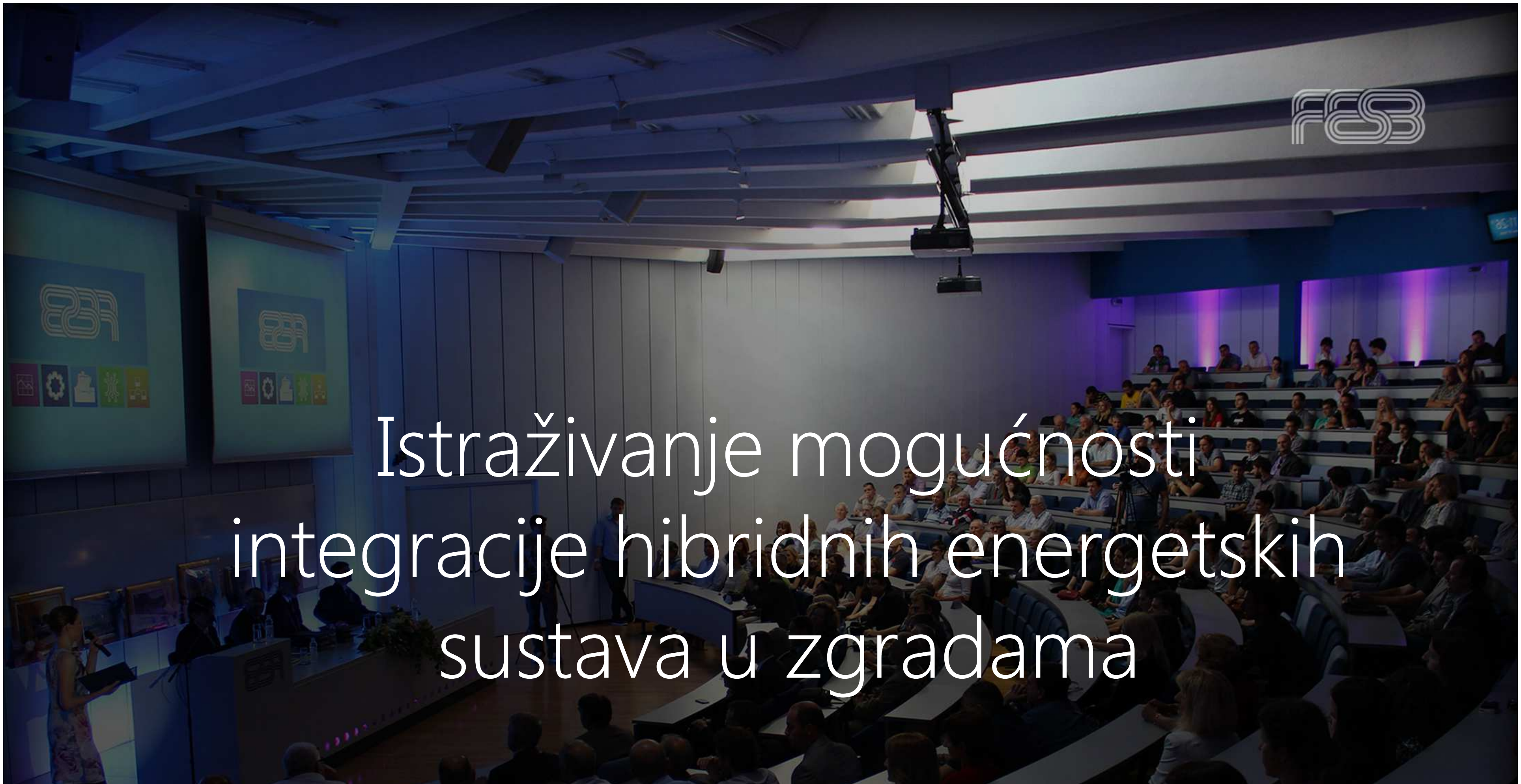


Istraživanje mogućnosti integracije hibridnih energetskih sustava u zgradama

izv.prof.dr.sc. Sandro Nižetić, FESB

Katedra za termodinamiku i toplinske strojeve

Opće okolnosti (Mediteranske zemlje):

1) El. energija primarni energent,

2) Konstantan zahtjev smanjivanja potrošnje energije/ energenata u zgradama (OIE↑, fosilna goriva↓, standardi u pogledu dozvoljene energetske potrošnje zgrade↑)

3) Najviši udio potrošnje energije/energenata u zgradama je zbog;

-sustava grijanja + priprema PTV,
-sustava hlađenja,
-HVAC sustavi (veliki objekti).

Mogućnosti?

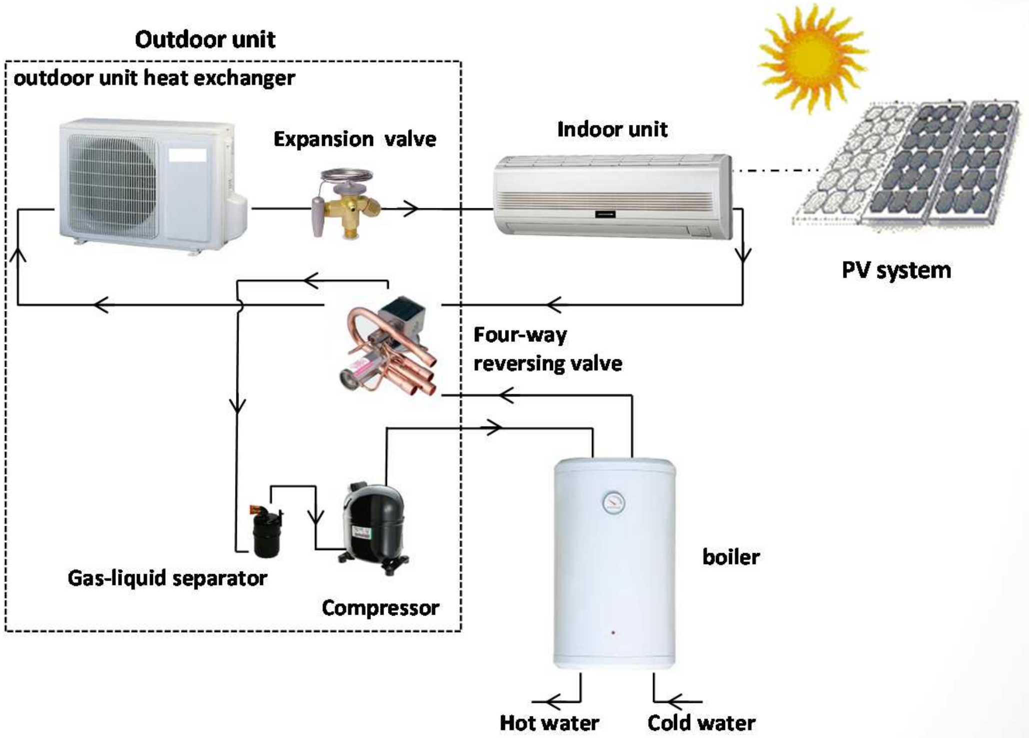
I – 100% OIE (višestambene zgrade jako problematične),

II – kombinacija OIE+fosilna opcija+strogi standardi u pogledu dozvoljene energetske potrošnje zgrade (možda izgledna opcija!)

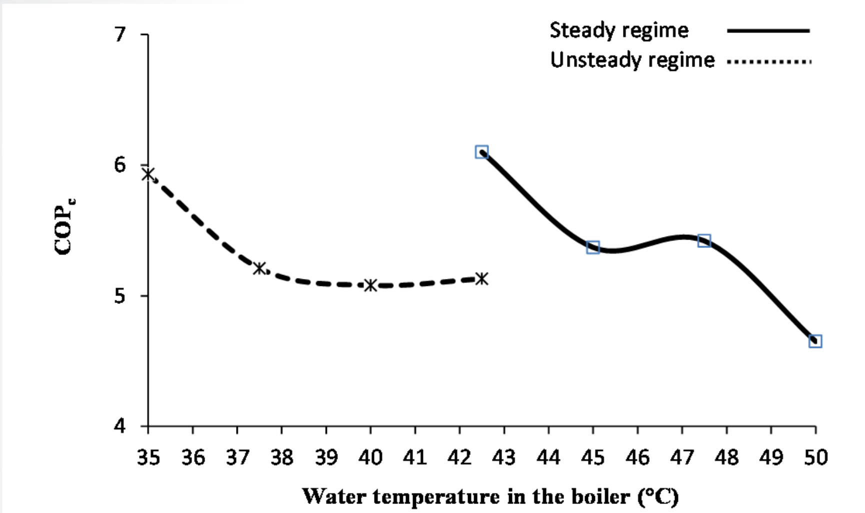
III – Možda nešto što još ne znamo?

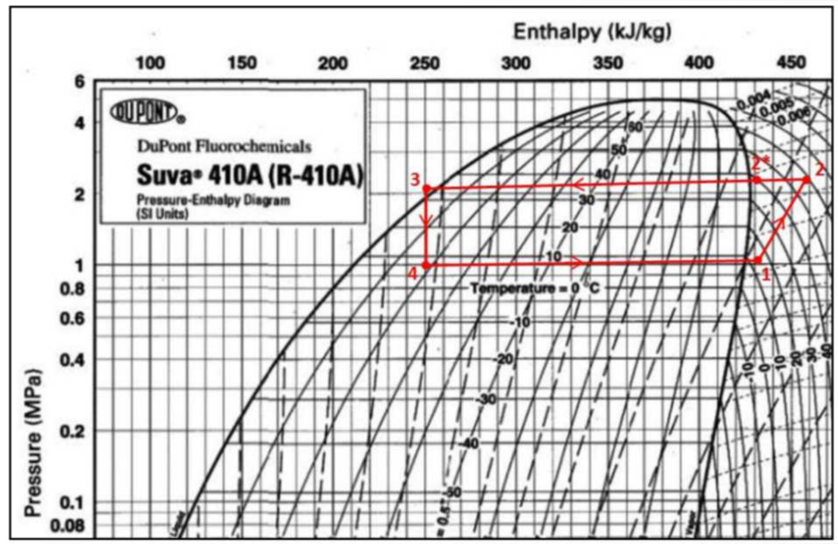
<u>Nužnost realizacije hibrinih energetskih sustava- spontani odgovor problemu!</u>

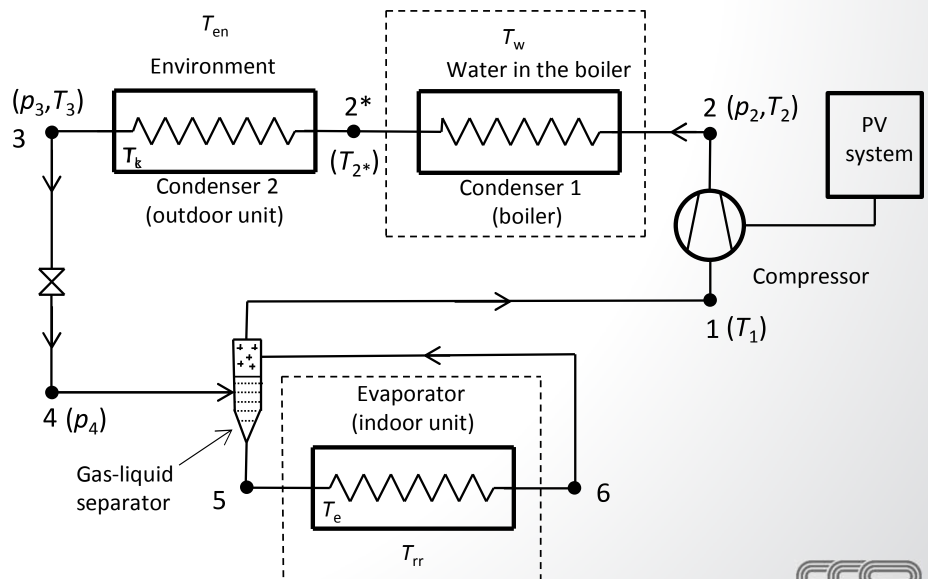
Hibridni energetski sustav - I

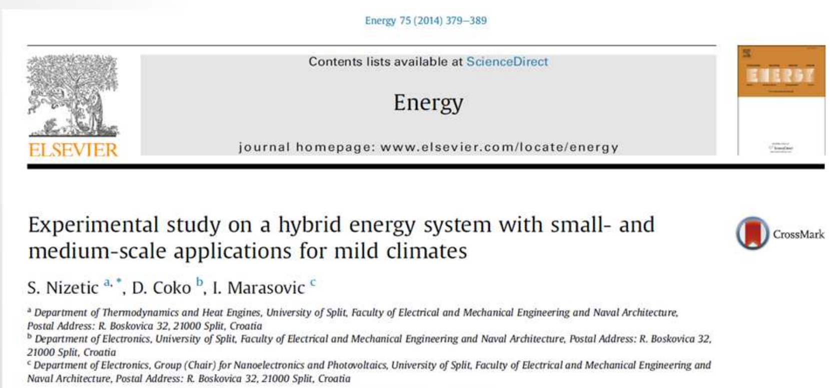


Hibridni energetski sustav - I









Energy 75 (2014) 379–389

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Experimental study on a hybrid energy system with small- and medium-scale applications for mild climates

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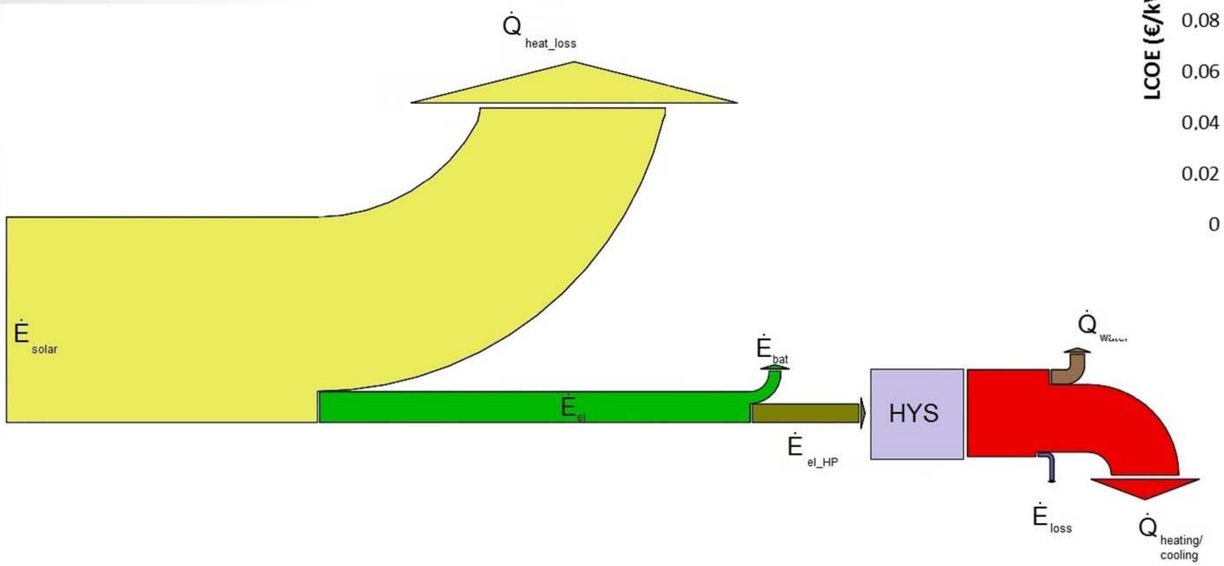
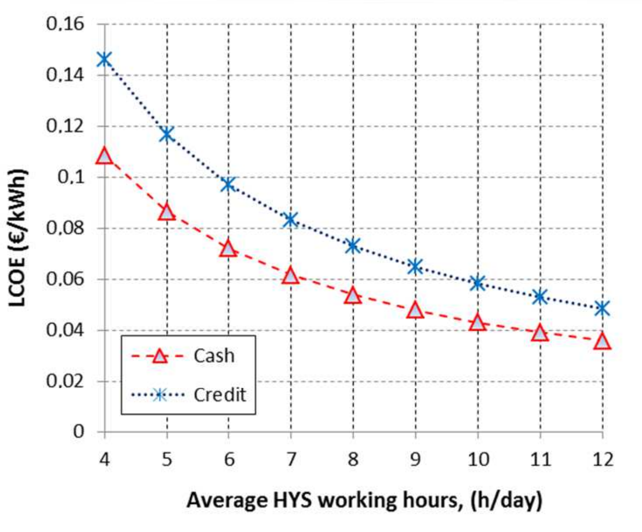
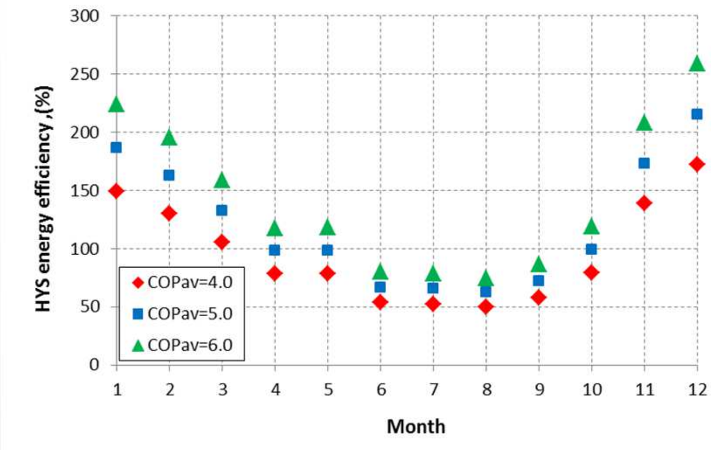
Hibridni energetski sustav - I

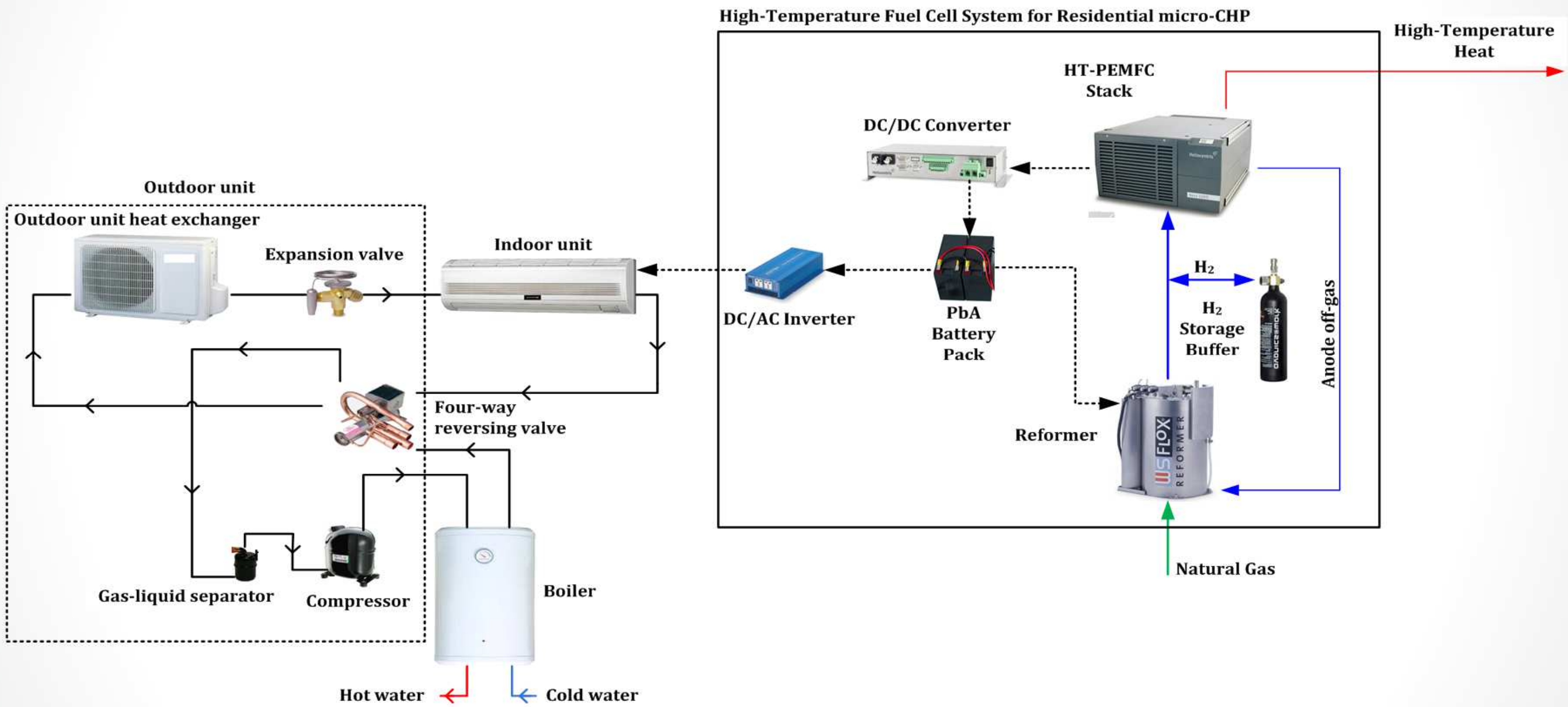






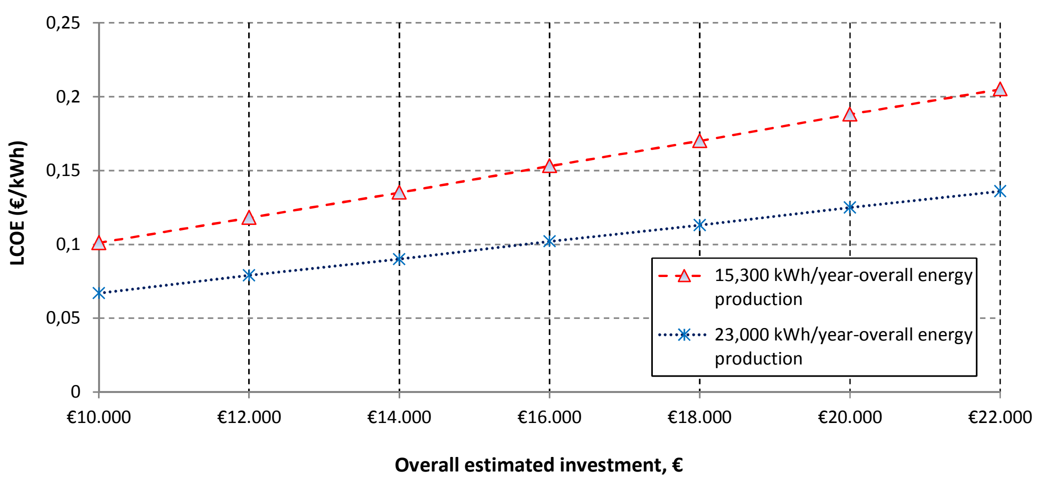
Nižetić, S., Duić, N., Papadopulos, A.M., Tina, G.M., Grubišić-Čabo, F. Energy efficiency evaluation of a hybrid energy system for building applications in a Mediterranean climate and its feasibility aspect, **Energy** (Elsevier) (2015), (Accepted article in press).

Hibridni energetski sustav - II

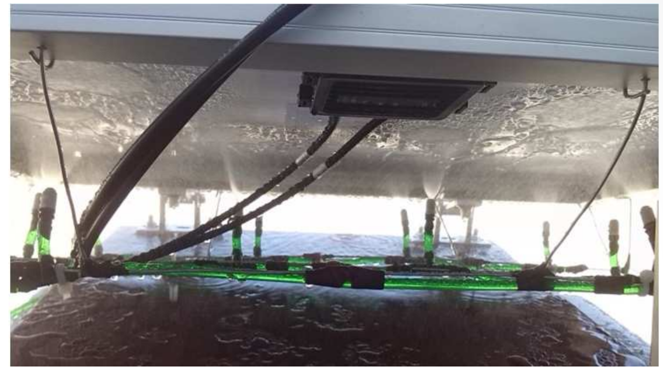


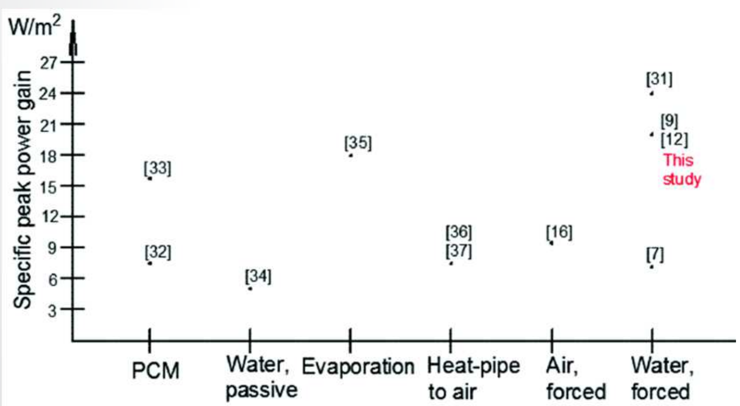
Hibridni energetski sustav - II

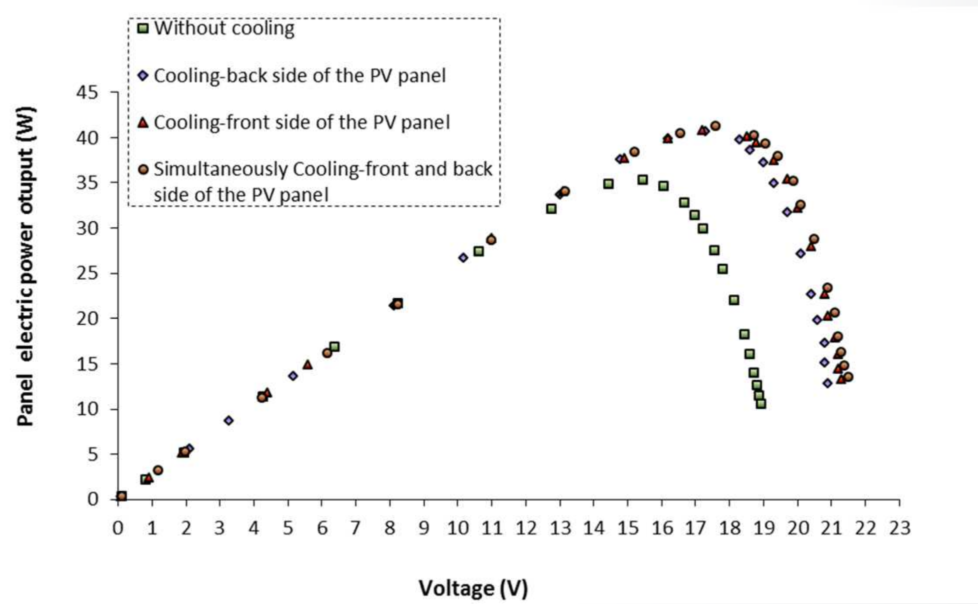
Month	E_{gas} (kWh/m)	N_{gas}(m^3/m)	C_{gas} (Eur/m)	Q_{w_LT}(kWh/m)	Q_{w_HT}(kWh/m)	$Q_{s\_H/C}$(kWh/m)
January	636	65	46	248	356	992
February	574	59	42	224	322	896
March	636	65	46	248	356	992
April	492	50	36	192	276	768
May	509	52	37	198	285	794
June	369	38	27	144	207	576
July	382	39	28	149	214	595
August	382	39	28	149	214	595
September	369	38	27	144	207	576
October	509	52	37	198	285	794
November	615	63	45	240	345	960
December	636	65	46	248	356	992
Total	**6109**	**623**	**446**	**2382**	**3421**	**9530**



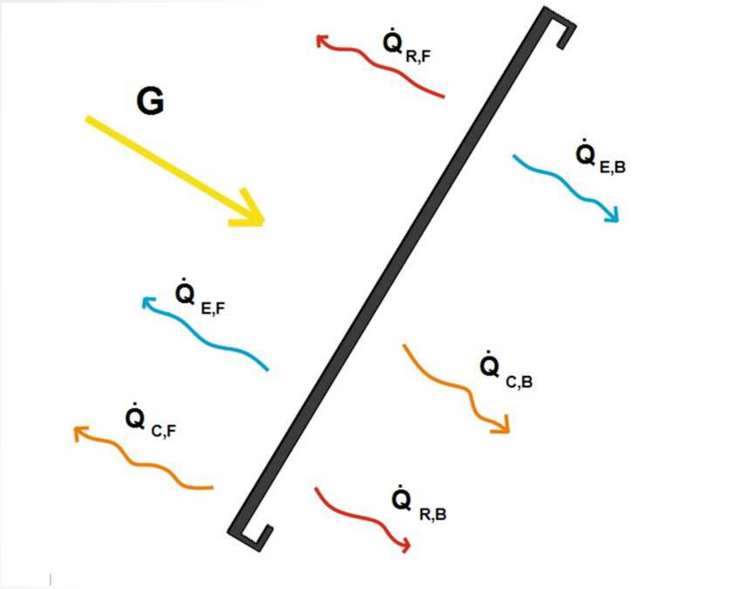
Tehnike hlađenja panela (Hibridni PVT sustavi)

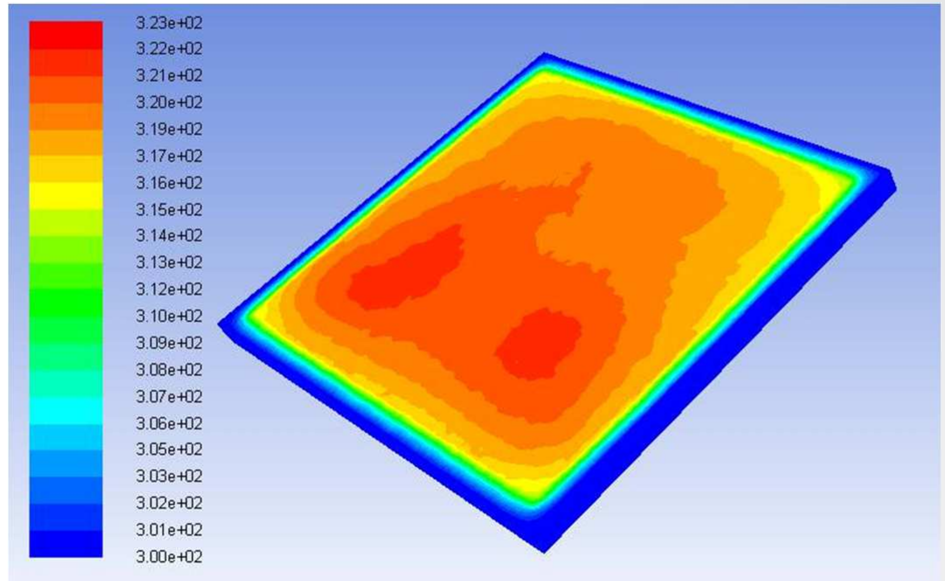


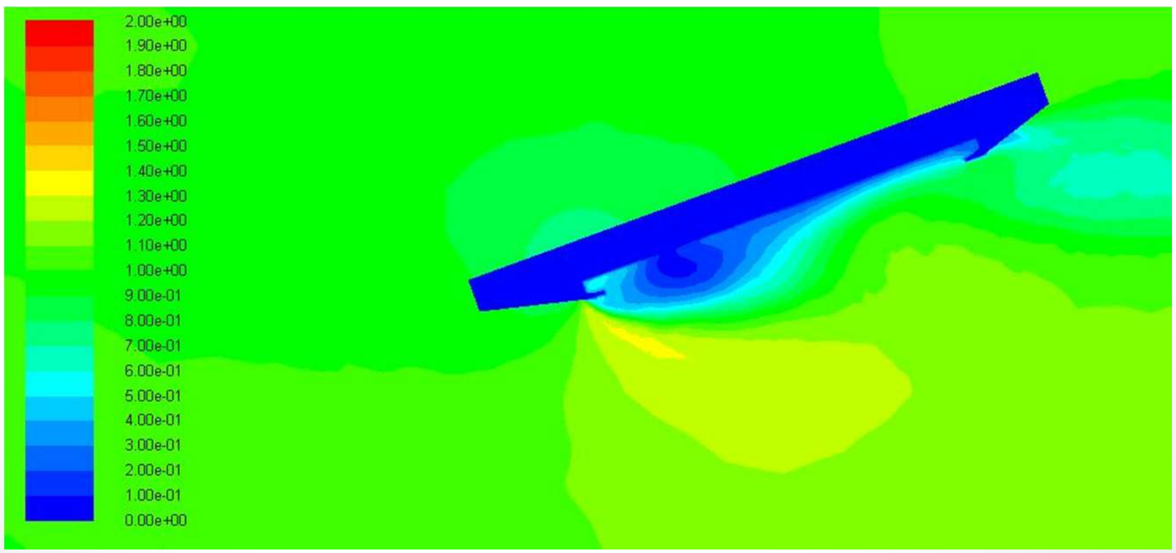




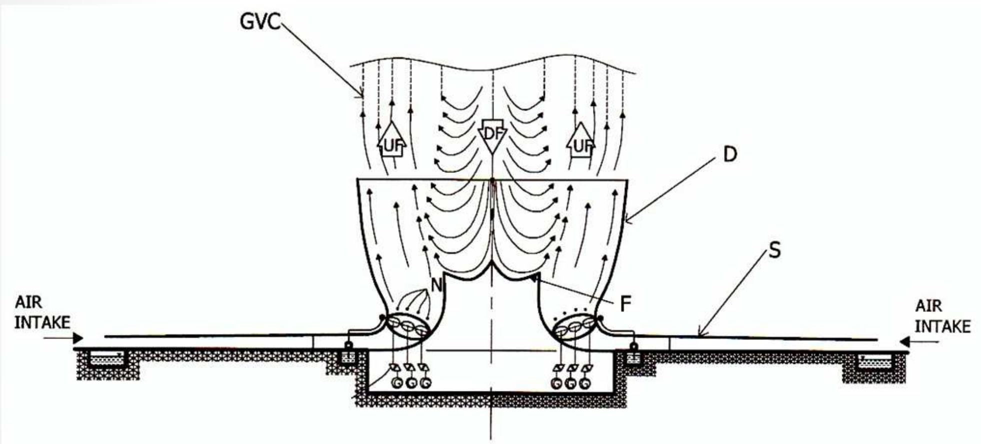
Istraživanje toplinskih pojava

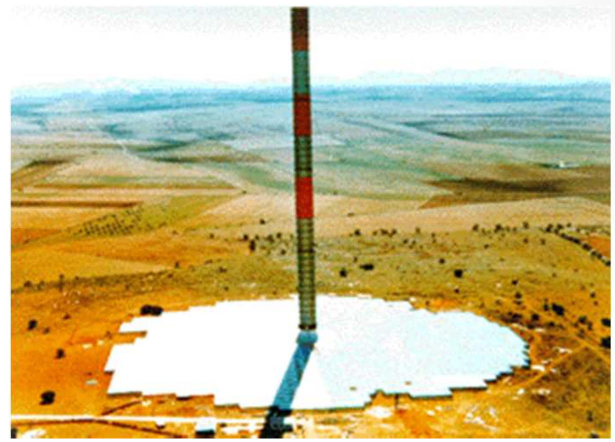


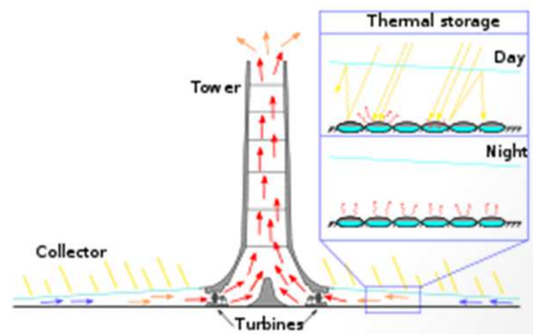




Istraživanje alternativnih koncepata kao OIE







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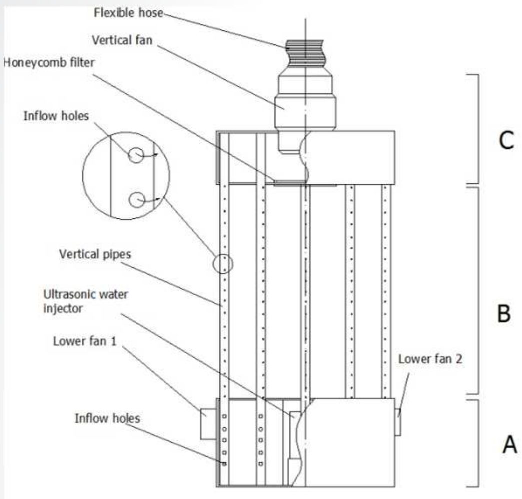
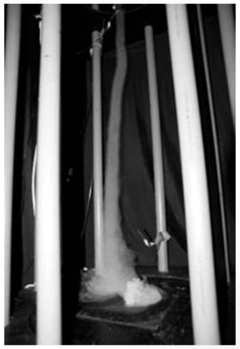
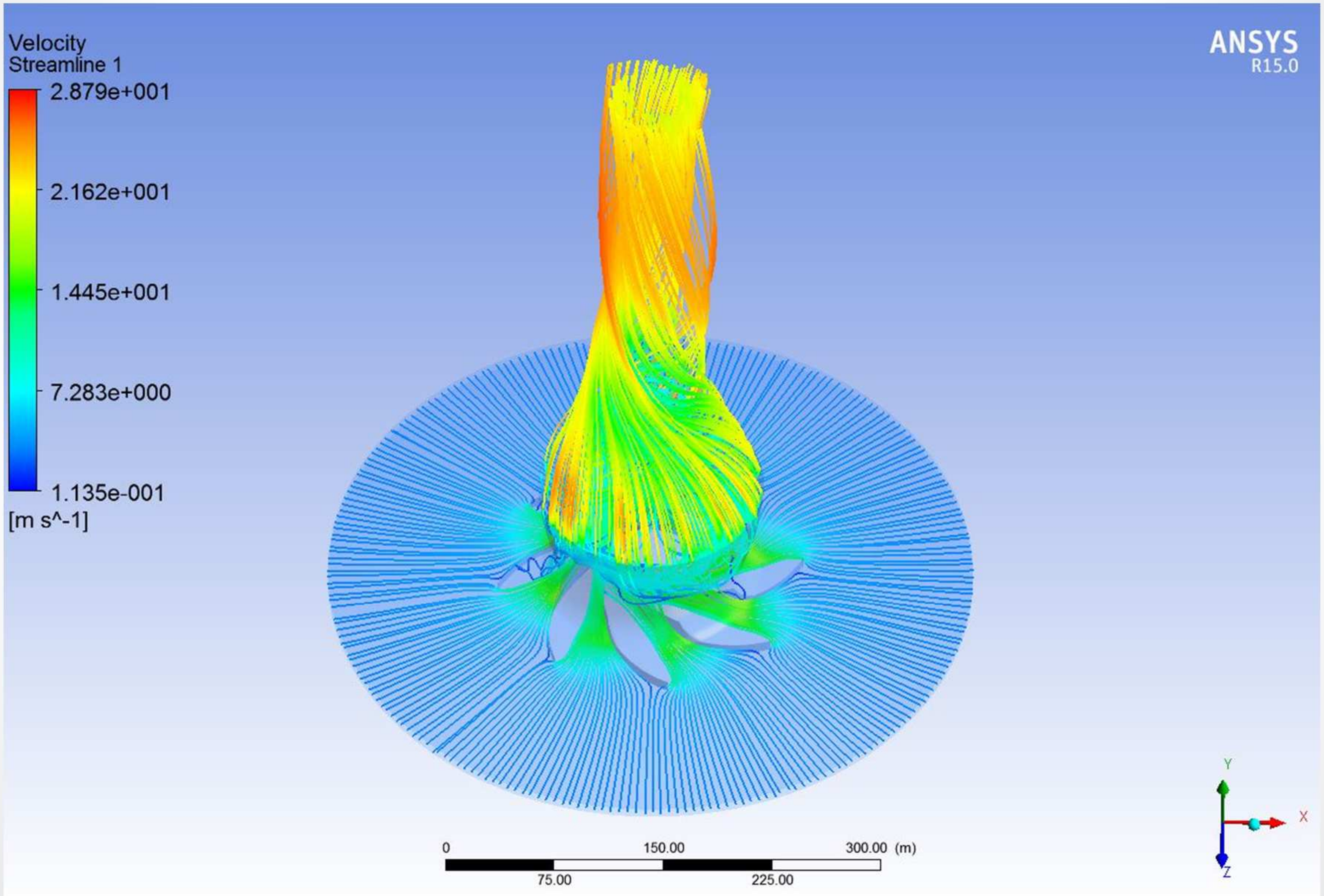




FESB

Istraživanje alternativnih koncepata kao OIE



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Aristotle University of Thessaloniki, Grčka

Koaceli Univeristy, Turska


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CONFERENCE CHAIR: Sandro Nižetić, FESB, Croatia
FOUNDING CHAIR: Ibrahim Dincer, UOIT, Canada

1st International Forum on Energy, Energy Efficiency and Hybrid Energy Systems (FEEHES-2016)

SPLIT, OCTOBER, 2016.

Hvala Vam na pažnji!