

Investigación en Industriales

Modelización de sistemas termo-energéticos
(Grupo de Investigaciones Termoenergéticas,
GIT)

Prof. Martínez-Val

INDUSTRIALES
ETSII | UPM



UPM

- J.M. Martínez-Val (ETSII)
- M. Valdés (ETSII)
- J.M. González (ETSII)
- A. Abánades (ETSII)
- J.A. Fernández (ETSII)
- A. Ramos (ETSIME)
- J. Muñoz-Antón (ETSII)
- R. Abbas (ETSII)
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EXTERNOS

- A. Rovira (UNED)
- M.J. Montes (UNED)
- M. Piera (UNED)



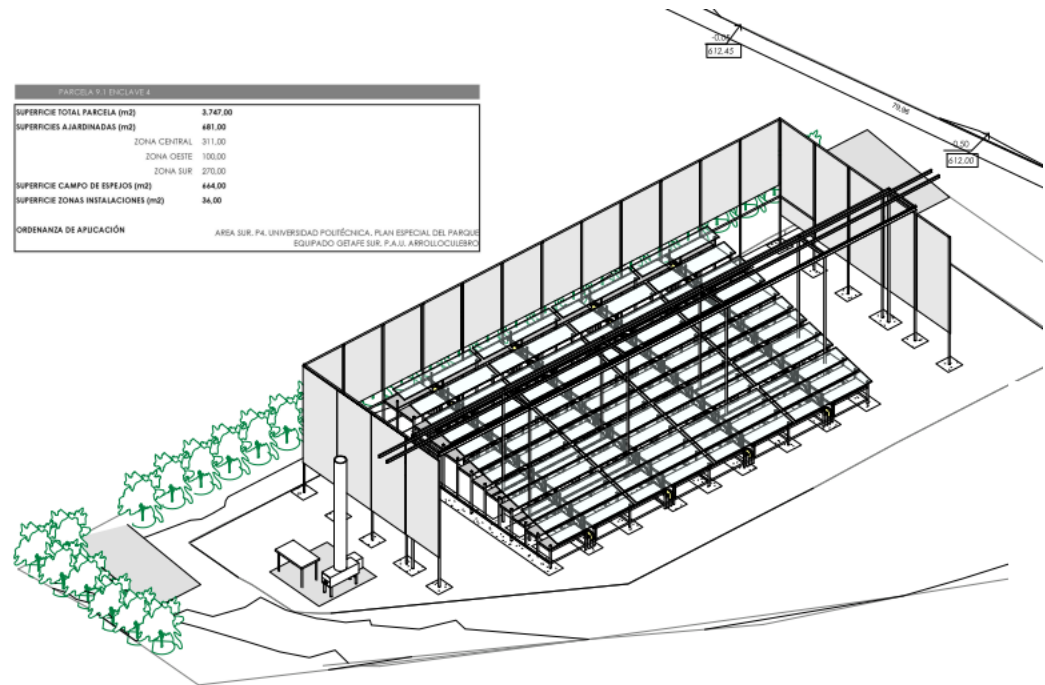
- Research and development agreement con The Institute for Advanced Sustainability Studies (IASS), 2011-2013
- Acuerdo de investigación y desarrollo tecnológico entre la UPM y OHL para desarrollar la iniciativa tecnológica “Futuro Solar”, 2014-Actualidad
- Distinct Research Study con King Abdulaziz University, Arabia Saudita, 2014



- RD-Agreement: Concentrated Solar Power for electricity generation
 - Colaboración in situ en IASS para análisis y cálculos de CSP
 - Colaboración con el CELES (Centro Latino Americano de Energía Solar)
 - Organización de un workshop sobre CSP con el DLR entre otros invitados
 - Estudio de colectores lineales Fresnel
- 4 JCR firmados con Carlo Rubbia, Director Científico del IASS
 - Rovira et al. 2014, Thermodynamic cycles optimised for medium enthalpy units of concentrating solar power, Energy
 - Montes et al. 2014, A comparative analysis of configurations of linear Fresnel collectors for concentrating solar power, Energy
 - Muñoz-Antón et al. 2015, Performance study of solar power plants with CO₂ as a working fluid. A promising design window, ECM
 - Martínez-Val et al. 2015, A coherent integration of design choices for advancing in solar thermal power, Solar Energy



- Desarrollo de un colector lineal Fresnel
 - Orientación EW
 - Inclinado
 - Receptor multitubo
 - CO2 presurizado como fluido calotransportador
- Construcción en TecnoGetafe
- Licencia de obras recién concedida





- Fresnel-based modular solar fields for performance/cost optimization in solar thermal power plants
- Búsqueda de reducción de costes en CSP mediante una disminución del material necesario y de mantenimiento
- Uso de gas presurizado como fluido calotransportador
- Dos papers resultantes de esta colaboración
 - Sait et al. 2015, Fresnel-based modular solar fields for performance/cost optimization in solar thermal power plants: A comparison with parabolic trough collectors, Applied Energy
 - Martínez-Val et al. 2015, A coherent integration of design choices for advancing in solar thermal power, Solar Energy



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- M.J. Montes, A. Abánades, J.M. Martínez-Val, Performance of a direct steam generation solar thermal power plant for electricity production as a function of the solar multiple, *Solar Energy*, Volume 83, Issue 5, May 2009, Pages 679-689, ISSN 0038-092X, <http://dx.doi.org/10.1016/j.solener.2008.10.015>.
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- Antonio Rovira, María José Montes, Manuel Valdes, José María Martínez-Val, Energy management in solar thermal power plants with double thermal storage system and subdivided solar field, *Applied Energy*, Volume 88, Issue 11, November 2011, Pages 4055-4066, ISSN 0306-2619, <http://dx.doi.org/10.1016/j.apenergy.2011.04.036>.
- Javier Muñoz, Alberto Abánades, A technical note on application of internally finned tubes in solar parabolic trough absorber pipes, *Solar Energy*, Volume 85, Issue 3, March 2011, Pages 609-612, ISSN 0038-092X, <http://dx.doi.org/10.1016/j.solener.2011.01.002>.
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