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Title:	H2020 TESSe2b project Researchers at Instituto Politécnico de Setúbal, Setúbal, Portugal	
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Presentation title:	GRAPHENE-BASED PHASE CHANGE COMPOSITE NANO-MATERIALS FOR THERMAL STORAGE APPLICATIONS	
<p>This article reports results referring to graphene based nano-platelets functionalization to improve the thermal properties of organic based Phase Changing Materials (PCM). Over the last years the use of PCMs have being appointed as a suitable way of develop thermal energy storage solutions based on the materials frozen/melting latent heat. Nevertheless the low thermal conductivity of these material, in particular of the organic based PCMs, it is a drawback and represents a limitation to the application of these solutions on real-life energy systems. The results clearly show that both dimension and shape of the GNP are important factors for the thermal properties, which were found to be significantly improved. It was found that the addition of only 1% weight of GNP with high aspect ratio is sufficient for doubling the thermal conductivity of several common PCMs. The present results provide an efficient and easy way for improving the thermal properties of PCMs, suitable for thermal storage applications. Furthermore, CFD simulations of the heat transfer process on a tubes and fins heat exchanger show that the PCM conductivity enhancement decreases the solidification/melting time.</p>		
CV:		
<p>Dr A. Rebola obtained a PHD in Mechanical Engineering from Instituto Superior Técnico (University Of Lisbon, Portugal) in 2010. Currently he is a researcher in H2020 Project TESSe2b at Instituto Politécnico of Setúbal. He has collaborated in 10 European projects on the energy field and has 20 publications in national/international conferences and peer-reviewed journals he is also author of a scientific Book chapter.</p>		