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Breathe2Seat – New methodologies for assessing comfort and moisture management in automotive seats

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Comfort properties are gathering global attention, mainly due to consumers' requests, motivating a growing interest by the industrial manufacturers on the search for innovative materials for fulfilling these requests, without compromising the materials' economic and environmental aspects. Due to the fact that materials used in automotive interior components, particularly in upholstery applications, are in direct contact with the users, their comfort properties are extremely important, being breathability and moisture management the main characteristics to be controlled. These automotive coated materials normally comprise three main layers uniformly assembled, having impact on the material final performance. This multi-layered system is therefore a complex system, being difficult to evaluate the overall comfort performance by conventional methods. For conventional textile materials, there are several methods to evaluate its breathability, moisture management and comfort but these methods are unable to correctly evaluate the performance of automotive coated materials because they do not take into account its complexity. This evaluation is even more complex when the materials are based on poly(vinylchloride) (PVC), which in general do not present a comfortable touch to the user and breathability is very low or non-existing at all. To improve the PVC-based materials comfort properties, developments at structural level are mandatory, stressing the need to develop an efficient and effective way for comfort evaluation. Comfort is a subjective concept, being dependent on the individual perception and environment conditions. In this work, we will present a new method to more accurately evaluate breathability and moisture management properties on PVC based automotive coatings, showing also some comparative results with benchmark materials.

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Biography

Anabela Carvalho has Bachelor's degree in Chemistry and a Master's degree in Materials from Renewable Resources from University of Aveiro in 2009. After her graduation, she has worked as reseacher in different projects, developing work on polymers synthesis and modification, characterization and functional coatings. She currently works as reseacher at CeNTI – Centre for Nanotechnology and Smart Materials, developing work in the functional materials area and also as responsible for the technical validation of the characterization analysis. Its main interest areas are polymers, functional coatings, materials and comfort.

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