The UV Protection Level of the Materials

Silva, Sthefany

Abilio, Juliana

The portion of the solar electromagnetic spectrum incident on the earth's surface, the range extending from 280 to 400 nm, which corresponds to Ultraviolet Radiation, and has been the cause of issues as skin cancer. The industries have presented many solutions of Protection Materials, however, we consider necessary to test The UV Protection Level of the Materials. Besides, there is a big disinformation of the population about the protection of these products. In this project we propose techniques for the analysis of the protection level of the materials to ultraviolet radiation. We departed from the fact that the pigments degrade as the incidence of UV radiation, through of Photolysis. We superimpose in a blue cardstock, several materials on its surface. Then, the apparatus was exposed to the sun obtaining a profile of the effectiveness of each material of the ultraviolet radiation as the function of the fade level observed in cardstock. In the Second stage, the same materials of the previous process were individually superimposed on an Arduino UV Sensor and exposed to UV Radiation It being possible, thereby, calculate the transmittance and determine the level of protection for each material. The analysis reveals that: the cloth behave differently with respect to UV protection, the automotive films, as well as sunglasses, have high efficiency to this radiation and that the level of sun protection of sunscreen SPF 30 and 60 have no relevant difference. Furthermore, We found a significant relationship between the amount of protection used and the level of protection.

Awards Won: