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CHARPY IMPACT TEST IN COMPOSITES OF ALIGNED HEMP FIBERS AS REINFORCEMENT TO EPOXY MATRIX

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Much has been studied about the uses of natural fibers, such as the lignocellulosic fibers, instead the synthetic ones. This replacement is justified by some characteristics of the natural fibers: in comparison with synthetic fibers, natural fiber has shown economic and environmental advantages. Furthermore, the natural fiber presents interfacial characteristics with polymeric matrices that favor a high impact energy absorption by the composite structure. However, until now little has been evaluated about the hemp fiber incorporated in polymeric matrices. This present work is supposed to evaluate the impact resistance of the epoxy matrix composites reinforced with different percentages of aligned hemp fibers. It's noticed that the impact resistance has substantially increased the relative amount of hemp fiber incorporated as reinforcement in these composites. This performance was associated with the difficulty of rupture imposed by the fibers resulting from the interaction of hemp fiber / epoxy matrix that helps absorb the impact energy.