

## بيانات عن البحث السابع المقدم للترقية

٧				رقم البحث في القائمة المعتمدة
<b>Numerical and Experimental Characterization of Composite Leaf Spring Subjected to Bending</b>				عنوان البحث باللغة الانجليزية
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### ملخص البحث باللغة الإنجليزية:

Composite materials have been used in many applications such as aerospace, marine, railways, civil engineering structures, and construction industries. Among these applications, the automobile industry has shown an increased interest of using composite materials over the last decades. Leaf springs have been widely used in automobile suspension system to isolate road shocks. This work aims to investigate flexural test of composite material under three point bending as it is an important aspect for leaf springs. Fillers were added to improve bending properties, aluminum oxide and silicon carbide nano-particles were added to the composite with different weight ratios at 1, 3, and 5 wt.% in both monolithic and hybrid forms. Experimental and numerical work on glass fiber reinforced polyester with/without fillers were done. The results show that fillers improve the bending properties up to limiting values and then decrease. The error between numerical and experimental results was found to be less than 2%.