

# Determination of the dynamic parameters of a structure made of spider silk

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The way a spider spins its web seems to be a simple procedure. However, it is a biological process that is a marvel of engineering. Spider silk is a unique material that combines high strength (greater than steel) with high elasticity and deformation capacity and cushioning (like rubber). Thus, an insect trapped on the fly by a spider will not bounce but it will stay lit. These mechanical resistance and elasticity often do not coincide in the same material and have not been overcome by any artificial fiber.

In this paper, spider silk is studied and analyzed with the purpose of synthesizing a similar material. If achieved, the material obtained may be useful even to make a network capable of stopping a plane. However, so far, artificial fibers which imitate the properties of spider silk for manufacturing require expensive materials, high temperatures and aggressive solvents.