

丝绸能比钢铁还坚韧吗实用英语考试 PDF转换可能丢失图片或格式，建议阅读原文

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's Mettle A study in the journal Science shows that adding a bit of metal to silk makes the gossamer but strong-as-steel natural fiber even stronger. When you think about silk, you probably think of gossamer fibers woven into lustrous garments or decadently soft bedsheets. But silk is also prized for its strength. Mechanically speaking, silk fibers are as tough as steel. But in the April 24th issue of Science, German researchers report that a dusting of metal makes silk even tougher. In nature, lots of insects and animals use a touch of metal to harden body parts such as jaws, claws, and stingers. So the scientists got to wondering whether they could take a similar tactic to make silk even stronger. Such reinforced fibers could prove useful for making really sturdy medical devices, like surgical sutures, or even artificial tissues like bone or tendon or even arteries. The scientists used a process called atomic layer deposition to coat some spider silk with zinc, titanium or aluminum. In addition to covering the outside of the silk, some of the metals seeped into the material, incorporating into the structure of the fiber. And, it will probably come as no surprise that the fibers infused with titanium or zinc or aluminum are much harder to break than Original Recipe silk. As the old adage almost goes, O, what a stronger web we weave, when bits of metal to the silk we cleave. 金属让丝绸更坚韧 我要收藏 发表在《科学》(Science)杂志上的一项研究表明，往丝绸中加

入一点儿金属可以让蛛丝一般但是坚韧如钢的天然纤维更加牢固。当你想到丝绸的时候，你可能想到是那些织成华丽服饰的薄纱，或者是那些柔软奢侈的床被。但是丝绸也因其韧性而受到人们的青睐。从机械的观点来看，丝绸和钢铁一样坚韧。不过，来自德国的研究者在4月24日的《科学》

( Science ) 杂志上报道说，少量的金属使丝绸更加坚韧。在自然界，许多昆虫和动物利用少量的金属使身体的某些部分（比如下颌、爪牙以及螫针）变硬。因此科学家们设想，是否可以采用类似的方法来使丝绸变得更加坚韧。这些强化纤维在制造真正牢固耐用的医疗器械方面会很有用，比如用于制造手术缝合线，或者甚至用于制造一些人工组织，比如骨头、腱以及动脉。科学家们使用一种名为原子层沉积

( atomic layer deposition ) 的方法把一些蜘蛛丝表面涂上锌、钛或者铝。这些金属除了覆盖蜘蛛丝的表面外，一些金属还渗入到蜘蛛丝的内部，与纤维结构形成一个整体。与“原味儿”的蜘蛛丝相比，那些注入了钛、锌或者铝的蜘蛛丝纤维更难于折断，这个结果将不会令人感到奇怪。这几乎正如一句古语所云“啊，我们仅仅把一点儿金属加入到丝绸中，就得到了如此更加强大的网”。

Vocabulary: Strengthen : 加强  
Mettle: 勇气；毅力 Gossamer : 蛛丝；薄纱 Fiber : 纤维  
Lustrous : 柔软光亮的 Garment : 衣服 Decadently : 奢华地；堕落地 Prize : 高度重视；珍视 Jaw : 下颌；口部 Stinger : 螫针；刺 Tactic : 手段；战术 Sturdy : 坚固的 Suture : 缝合线  
Artificial : 人造的 Tendon : 腱 Artery: 动脉 Deposition : 沉积  
Zinc : 元素锌 ( Zn ) Titanium: 元素钛 ( Ti ) Aluminum: 元素铝 ( Al ) Seep: 渗透 Incorporate: 吸收；使并入 Infuse : 注入

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