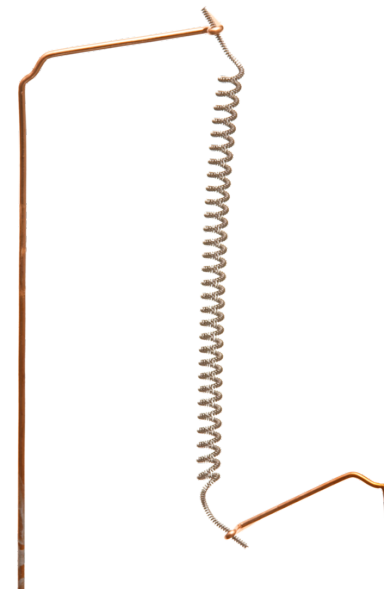


Catalyst makes alkanes reactive

Read the full article at rsc.li/3ePCkZL

Methane and other small alkane hydrocarbons are not usually used to make other substances for two reasons: they are gases (inconvenient to work with) and they are nearly inert in all but the harshest conditions.

Chemists, however, have discovered a tungsten photocatalyst that breaks the strong inert carbon–hydrogen bonds of methane and other light alkanes at room temperature. Normally it would take temperatures of more than 500°C to break these bonds. In the new process, the gaseous hydrocarbons are fed into a flow reactor with the catalyst and they then react with alkenes. This is a rare example of directly using natural gases as reagents. Given how cheap and readily available light alkanes are, there is a lot of untapped potential for their use as starting materials.



A tungsten light bulb filament
Light bulbs are manufactured with tungsten filaments because tungsten has an abnormally high melting temperature.

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1. What is a hydrocarbon?
2. Draw the displayed structure of propane C_3H_8 .
3. Explain why alkanes are usually inert.