

So Why is the Chemical Symbol for Tungsten "W"?

Mark Darus, General Electric Co.

The tungsten mineral wolframite was known in the tin mines of the Saxony-Bohemia region long before the element itself was discovered. The origin of the word is assumed to be derived from the German words "wolf", meaning beast of prey, and "rham", meaning froth. "It eats up tin as a wolf eats up sheep". The writers of the period before 1781 had vague ideas as to the composition of the mineral that they had named. Tin miners called the mineral "mock-lead", an ore containing iron, arsenic, tin and a non-metallic earth, or glassy earth containing iron and tin.

The earliest mention of Wolfram in literature was made by Lazarus Ercker in 1574. The spelling has gone through many modifications; wolfert, wolfort, wolfart, wolffert, wolfrig, wolfram, wolferan, wolferam, wolfsh. woolfram, wolframit and wolframicum. In 1820, A. Breithaupt in his book *Kurze Charakteristik des Mineralsystems* finally adopted the word "wolframite" for the mineral containing tungstate of iron and manganese.

The word Tungsten is derived from the Swedish words "tung", meaning heavy, and "sten", meaning stone, and was first used by A. F. Cronstedt in 1755.

It was not until 1781, that the Swedish chemist Scheele who had been working with a stony mineral elucidated the composition of the mineral to be a compound of calcium with an unknown acid, and the discovery of a new element was in the offing. Later, in 1821, C. C. Leonhard, in his *Handbuch der Oryktognosie* honored C. W. Scheele by naming the mineral with which he experimented "scheelite".

In 1783, the brothers J. J. and F. de Elhuyar, one of whom had worked under Scheele, found that wolframite also contained tungsten, but with iron and manganese instead of calcium. They named the metal "wolfram". Although Scheele might have already prepared the metal, the first published account of the isolation of the element is that of the Elhuyar brothers.

Wolfram is the official international alternate name for tungsten. Tungsten is preferred in the United States. It came into prominence after 1904, when Just and Hannaman patented a process for drawing tungsten filaments.



The Hodja's Donkey

Robert H. Olley,

J.J. Thompson Physical Laboratory, Univ. of Reading

I will go back a few hundred years to the Middle East, to visit a man called Nasr-ed-Din. He was a local official who worked as a town clerk, magistrate, and letter writer, since he was the only learned man in his town or village. A man in his position would have been called a Mullah in Persian, and in Turkish a HODJA, which is how I will call him from now on.

The Hodja had heard about some Sufis who claimed that they could achieve enlightenment by going for a long time without food, and he thought that this sounded like a good idea. But it also seemed a bit dangerous, so he thought he would try it on his donkey first. He normally gave the animal 20 scoops of grain a day, so for the next week he gave it 19, then the week after 18, and so on. By the time he had reached 10, the donkey was beginning to get weak and to wander about as if in a dream.

"Excellent" thought the Hodja, "it is beginning to learn the art of meditation!"

But just before he was getting down to 3 scoops a day, the donkey died.

"Inconsiderate beast" he cried. "Dropping dead before the experiment was complete. If only it had lived a few weeks longer, it might have achieved full enlightenment!"

All over the world, in university science departments, numbers have been falling. Typically, since around 1970 student numbers have dropped to about 75% of their original number; teaching staff to about 50%; and technical staff to about 25%.

This last figure has put an enormous burden on the research as well as the teaching effort. Whenever "A" retires, the government body says "You don't need a replacement, can't "B" and "C" share his job? And so on . . .

It is predicted that by the year 2010 such a department will be running on no staff at all! But it must expire before then, once it gets below a critical (m)ass

Front Page Image

Wood Anatomy: Rays In The Profile

by N.J. Chaffey, Swedish University of Agricultural Sciences, Umeå, Sweden

Radial longitudinal section through the cambial zone of hybrid aspen showing the prominent nuclei of the ray cells stained with Schiffs reagent. The image is a color depth-coded single projection of a stack of 20 optical sections taken with the Zeiss LSM510 confocal scanning laser microscope. Further information about the trials and tribulations of wood microscopy can be found in the article by N.J. Chaffey starting on page 12 of this issue

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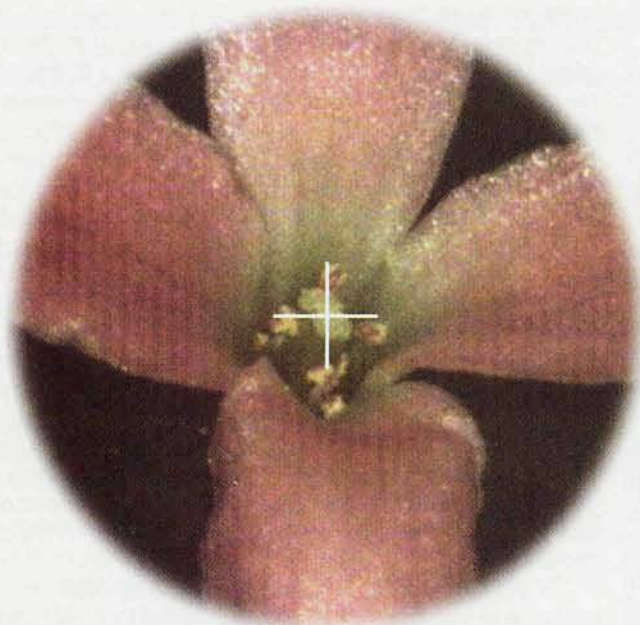
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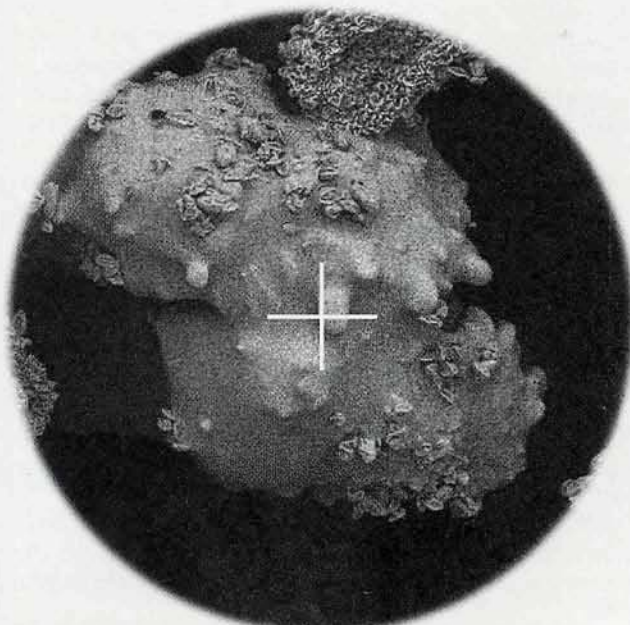
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Don Grimes, Editor

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