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SHAFIZADEH ON FIRE RESEARCH

MISSOULA, Mont.--

Fire constantly threatens man's life, health and domestic property.

University of Montana researchers seek the secret of cellulose fires--fires from such natural fuels close to man as cotton and wood.

Dr. Fred Shafizadeh, director of the UM Wood Chemistry Laboratory, has a staff studying the nature of cellulose fires, for there lies the secret to fire control.

The Romans used the Egyptian fire solution: They covered their warships with vinegar and clay, making them flameless but smelly, and their clothing with borate compounds.

Two thousand years later, fire bombs in Germany in the Second World War damaged more life and property than the atomic bombs accomplished in Japan.

In just one calendar year--1966--2.5 million fires in the United States killed 12,000 people, caused numerous injuries and \$1.5 billion worth of damage to buildings. It also burned 4.5 million acres of forest and wildland.

We have been using the same techniques as the Romans. With all the scientific advancement, is there no better way to control fire? Dr. Shafizadeh inquires.

A chemistry doctoral candidate from Seattle, Gary McGinnis, is Dr. Shafizadeh's right hand man in the cellulose tests.

"We know that gases and volatile tars burn, not the cellulose substance." Dr. Shafizadeh added that now we need to learn how the cellulose solid can transfer to gas. Their search requires a very accurate chemical analysis of the volatiles released when cellulose is heated.

These processes may yield the secret of how the solid cellulose changes to a gas and volatile tar. Then, Dr. Shafizadeh says, the search for control begins.

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FIRE, SHAFIZADEH--2--

They will coat the cellulose with chemicals to restrain or stop the solid-to-volatile-gas change. The most effective chemical compounds are candidates for flame-proofing.

The search for the essentials of cellulose is a complex, expensive project. Dr. Shafizadeh has a joint professorship in chemistry and forestry, funded in 1966 by a \$143,000 grant from the Hoerner Waldorf Corp. Since then the University in Missoula and the U.S. Forest Service have contributed to his research.

Better ways to avoid and extinguish fires, in forests or in the home, would be only one of the benefits of Dr. Shafizadeh's research. His work might save the world money--- and some agony.

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