An LSU Agricultural Center researcher’s patented process to make wood-plastic composites has found a new application in the oil and gas business as an additive in drilling mud and could help a New Iberia start-up grab a piece of a $200 million market.

Qinglin Wu, the Roy O. Martin professor of Composites and Engineered Wood Products, patented a technique to turn used plastic motor oil containers and wood waste into a strong composite material that can be used in construction, according to the Agricultural Center.

When added to drilling fluid, the material — called Tiger Bullets — prevents the drilling mud from seeping away.
New Iberia-based Hole Pluggers, a start-up, signed a licensing deal with the Agricultural Center to market Tiger Bullets to energy companies.

Hole Pluggers is contracting with Dan Wallace, the owner of Wallace Moulding & Millworks, of Columbia, to make Tiger Bullets. Wallace already had planned to move into the plastic lumber business, using Wu’s technology, and has been working with Wu for months to do so. However, the slumping housing market forced Wallace to lay off 30 of his 45 workers.

In a prepared statement, Wallace said he had been able to rehire some of those workers and possibly more by the first of the year to help make Tiger Bullets for use in drilling mud.

Drilling mud lubricates and cools the drill bit as it cuts through the earth. Under ideal conditions, the mud comes back up with the drill cuttings, according to the Agricultural Center. When the mud seeps away, that’s called “lost circulation” and it is a huge and expensive problem.

Todd Hovey, one of Hole Pluggers’ owners, said lost circulation costs for the oil and gas industry were estimated at $800 million last year. Meanwhile, drilling companies spent $200 million on lost circulation materials or products to prevent the seepage, he said.

Wu’s Tiger Bullets help reduce lost circulation.

Tom Parker, one of Hole Pluggers’ owners, said with Wu’s process, the company can tailor the Tiger bullets particles’ size to fit the particular geology of a drilling operation.

The multiple sizes of bullets can plug any size crack or opening, preventing seepage, Parker said in a prepared statement.

Don Briggs, president of the Louisiana Oil and Gas Association, said drilling mud and related services can easily account for $1 million to $1.5 million in a drilling project’s cost.

A product that can reduce costs economically could be successful, he said.

Hovey said that with the economy in the doldrums, it’s difficult to say now what kind of revenue Hole Pluggers can expect.

The company is hoping energy companies will begin drilling in the Gulf of Mexico after hurricane season, he said.

“I’m hoping we do at least a million, a couple million for the first year. That wouldn’t be bad,” Hovey said.
Wade Baumgartner, associate director of the Agricultural Center’s Office of Intellectual Property, said a lot will depend on how quickly and readily the energy industry accepts Tiger Bullets, especially in offshore projects whose deeper wells require more drilling mud.

“A lot of it depends on the price of oil, too. If oil goes to $110 a barrel, just for example, there’s going to be a lot more drilling going on than if oil’s at $45,” Baumgartner said.

Under the LSU System’s bylaws, researchers get 40 percent of the royalties their inventions generate, Baumgartner said. The LSU campus gets 50 percent, and the LSU System’s office gets 10 percent.

Hovey said Hole Pluggers is providing Tiger Bullets to two major exploration and production companies, one in the Fayetteville Shale in Arkansas and another in the mountains of Colorado. Hovey said he did not have permission to release the names of the firm’s clients.

Advocate business writer Ted Griggs and Linda Foster Benedict of the LSU Agricultural Center contributed to this report.