SINGAPORE : Singapore's Institute of Bioengineering and Nanotechnology, has managed to create a new class of nano-particles, which may lead to lower costs in pharmaceuticals production.

These nano-particles are between 50 and 300 nanometres in size. A nanometre is one-billionth of a metre in length.

The groundbreaking research was recently featured in a leading Chemistry journal, and a US patent has been filed on the invention.

Already several pharmaceutical giants are interested in the technology, and the institute hopes to see its invention in industry use in around two years.

Pharmaceuticals companies have all along faced a difficult challenge in removing catalysts and other unwanted materials from their final products.

But all that is set to change with the nano-particles created by Professor Jackie Ying and her co-researcher, Dr Han Yu.

"By introducing these new nano-particles, we have made this traditional catalyst into a solid phase material, and they can easily be separated out from the products. So you are separating a solid from a liquid by simple filtration. This will make the manufacturing process a lot more efficient, and will allow you to recover these expensive catalytic materials," said Prof Ying, executive director of the Institute of Bioengineering and Nanotechnology.

This new invention is expected to bring substantial cost savings in an industry segment which generated US$143 billion in sales in 2003.

"Right now, manufacturing is 10 to 40 percent of the cost of making pharmaceuticals. Most of them use this inefficient manufacturing process. By this approach, we can simplify the process substantially and save a lot of money," Prof Ying said.
The Institute of Bioengineering and Nanotechnology is talking to several major pharmaceutical giants, and hopes to see the product in commercial use within two years.

Other uses for the nano-particles include targeted drug delivery and gene therapy.

Since it was set up two years ago, the institute has come up with 45 inventions so far.

- CNA

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