

# Cheng Chao-Min Invents Teabag which Tests for Residues of Agricultural Chemicals

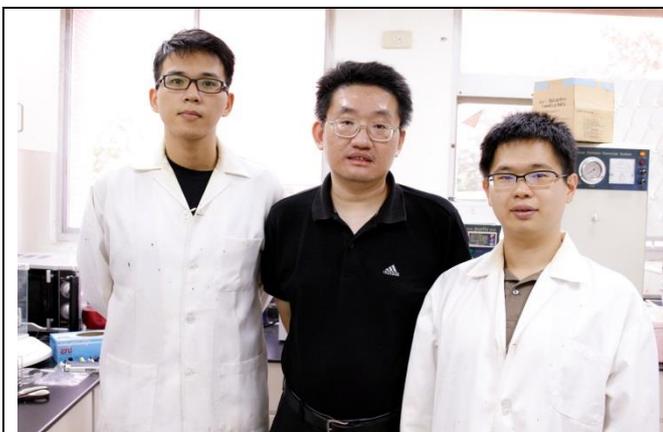
Drinking tea is a long tradition in Chinese societies. Yet the adverse side-effects of agricultural chemicals commonly used in tea plantations is becoming a serious concern for an increasing number of tea drinkers. With this in mind, Cheng Chao-Min, Assistant Professor in the Department of Power and Mechanical Engineering, has developed a tea label capable of testing for excessive levels of chemical residues. Cheng has already applied for a patent for his invention, and he expects that it can be very affordable when mass produced.

"Science should benefit our health and be a part of our everyday lives!" exclaims Cheng. Spurred on by increasing public concern about food safety, Cheng and his research team set out to develop a convenient and affordable way to test chemical residues in tea. The result is a test paper which is attached to the same cotton string used with conventional tea bags. While the tea is being steeped, the string transmits a minute sample of the tea to the test paper. Within three minutes the test paper indicates whether the tea contains any significant traces of such substances as paraquat or glyphosate, two of the main ingredients of the agricultural chemicals commonly used in tea production.

According to Mr. Chen Guan-hong, the research team is currently working with Yan Zong-hai, a physician at the Changgeng Hospital in Linkou, to develop a test paper which can quickly identify various types of pesticides and insecticides for use in the emergency treatment of people poisoned by agricultural chemicals. As Chen smilingly puts it, "Do-it-yourself testing is the best approach." Himself an avid tea drinker, Chen is pleased that he is contributing to the development of a simple way to assure consumers that their delicious cup of tea is safe to drink.

Cheng's research team is also developing a similar product for testing the nitrate levels in a hotpot. Cheng explains that when people enjoy hotpots in the winter they tend to repeatedly add their favorite herbal concoction. Yet, this can result in the production of carcinogenic nitrates. Similar in design and function to the test-paper tea label, the nitrate test paper is also attached to a cotton string and indicates whether the broth in a hotpot is still safe for consumption.

Cheng is also considering developing a similar product for testing cosmetics. Emphasizing that research should have practical benefits for society, Cheng states, "By using inexpensive materials and innovative thinking, this kind of cutting-edge science can make life better for all of us!"



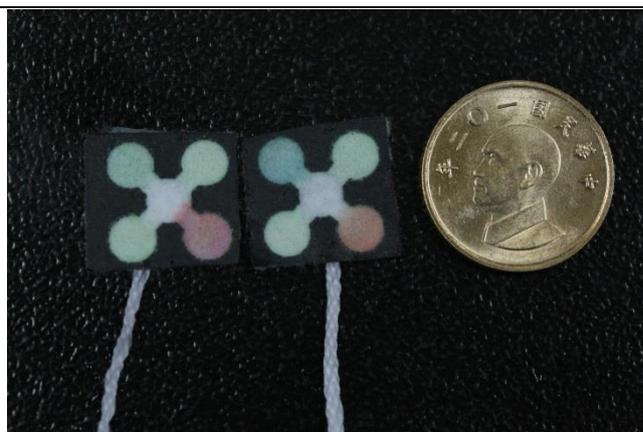
The research team (left to right): Lin Shang-Chi, Cheng Chao-Min, and Chen Guan Hong.



The tea sample reaches the test paper by passing through the same kind of cotton string used on ordinary tea bags.



The test paper can detect harmful levels of agricultural chemicals.



Test paper before and after use.