

# MIZZOU

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## Around the Columns

### A pleasant plasma

Dentistry has come a long way since ancient Egyptians applied olive oil, dates, onions, beans and green lead to soothe throbbing teeth. But despite modern anesthetics and other advances, the noise and bite of a dental drill digging out a cavity can still make most of us cringe. Two Mizzou engineers are developing a new plasma “brush” that promises not only to work quietly and painlessly but also to prepare teeth better for bonding to the fillings. And it could save billions in costs to repair failed fillings.

The engineers, Quingsong Yu and Hao Li, assistant professors of mechanical and aerospace engineering, came up with a method of using argon gas to create a plasma-tipped tool. The tiny gaseous tip looks much like a scrub brush. It works at room temperature to excavate the cavity, clean the tooth and prepare it to bond with the filling.

The new method is much kinder to healthy tissue than the drilling and chemical etching dentists now perform to prepare the cavity for the filling. Using the drilling-etching method, fillings fail after about five to eight years. So, forming a better bond could save big bucks. Dentists spend nearly three-fourths of their time dealing with failed fillings, which cost consumers about \$70 million in 2002 alone.

The brush is still a few years away from approval, but it could eventually go a long way toward lessening the fear and monetary costs of those dreaded dental visits.



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