A tiny windmill invented at the University of Texas at Arlington could end up charging future smartphones, according to researchers.

Engineering majors had been trying to figure out potential uses for a new metal alloy when graduate research associate Smitha Rao recalled her 3-year-old playing with a toy windmill.

The group suggest that thousands of windmills — 1.8 mm in diameter — could be put together in a sleeve that would cover a smartphone. That sleeve, once waved through the air, could recharge a phone’s battery, according to the UTA research.

Each windmill is so small that a single grain of rice could hold 10 of them.

Electrical engineering professor J.C. Chiao said he was shocked at how well the windmills worked.

“Research is often about making mistakes,” he said. “This is really good. Smitha (the designer) had really good intuition. I’m really proud.”

Chiao said he hopes the idea will be purchased by a developer, potentially raising hundreds of thousands of dollars for the university’s engineering department. UTA has applied for a patent on the windmill and is seeking a commercial partner, he said.

So far they have interest from Taiwanese Micro-