Sensing danger in baby cribs

Like many new fathers, Hung Cao stared in amazement behind the maternity unit’s observation window when his son was born six years ago. But one question haunted him: “How do I know he’s OK?”

That’s when the engineer in Cao took over.

The newly minted engineering doctoral graduate had been working on something quite un-baby-like. He was part of a UT Arlington team tasked with building a wireless sensor that detected gas escaping from long-idled missiles. If gas leaks, the missile might not function.

He approached his Ph.D. adviser, electrical engineering Professor J.-C. Chiao, with the idea that the missile sensor might be adapted to determine if a baby was exhaling carbon dioxide. The two researchers have now received a patent for a device aimed at saving babies’ lives through improved and rapid detection of breathing problems, including sudden infant death syndrome (SIDS), which typically occurs in infants under a year old while the child is sleeping. Cases are classified as SIDS when there’s no other explainable cause of death.

“Our sensors let you know if the baby is breathing normally without the wires and breathing tubes.”

Drs. Chiao and Cao are working with Heather Beardsley, a research engineer at

Electrical engineering researchers received a patent for a device that attaches to baby cribs and detects carbon dioxide being exhaled. The wireless system could help prevent sudden infant death syndrome.
Hung Cao is working on a sensor to detect abnormal breathing patterns in sleeping babies.