Multi-Modal Imaging of Aggressive Prostate Cancer  
(UTA 14-24)

Technology Need:

About 233,000 men will be diagnosed with and about 30,000 will die from prostate cancer this year. Treatment of prostate cancer can be high risk as side effects include impotence and/or incontinence. Therefore, overreacting to the slow-growing low-risk form of prostate cancer can devastate a patient’s quality of life, while a weak response to the high risk aggressive form may result in death. Screening techniques that enable clinicians to identify prostate cancer and its form would allow for an appropriate response to be taken. Transrectal ultra-sound (TRUS) is the current technology used to guide screening procedures. The problem is that TRUS only locates the prostate rather than cancer. This leaves locating cancer up to chance.

Solution/Offering:

Researchers here at UTA have developed a new imaging technique using a portable device that couples with TRUS transducers to increase the effectiveness of current treatment by enhancing the clinician's ability to locate and categorize prostate tumors. Studies have demonstrated that this new imaging technique can be used to achieve a diagnosis that is more accurate than current methods (1). The device allows for early detection of aggressive prostate cancer, reduction of unnecessary biopsy procedures, and improvement of a patient’s quality of life.


Meet the Inventor
Dr. Hanli Liu is a Bioengineering Professor at the UTA. She received here B.S. in Physics from Beijing Normal University in 1983 and both her M.S. in Physics and Ph.D. in Applied Physics from Wake Forest University in 1990 and 1994, respectively. Her research interests lie in medical instrumentation and imaging, as well as minimally invasive and non-invasive spectroscopy and optical diffuse cancer prognosis. She is a member of the International Optical Engineering Society (SPIE), IEEE Lasers and Electro-Optical Society (IEEE-LEOS), and American Physical Society (APS) among others.

Value Proposition:

- Easily coupled with current state of the art
- Increases effectiveness of current prostate cancer screening and treatment
- Saves clinicians and patients time and money

Industrial application:

- Healthcare - Needle Biopsy Cancer Screening

Patent Status:

- Provisional

Current Stage:

- Prototype

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