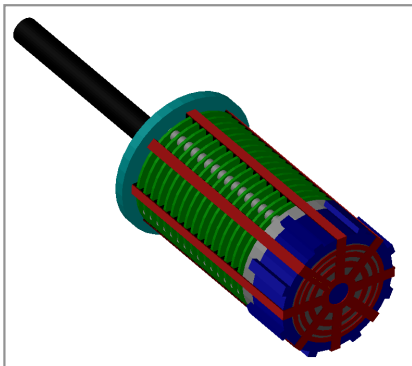


## ELECTROMAGNETIC ACOUSTICAL TRANSDUCER SYSTEM (EMAT)



Fresnel zone focused EMAT probe

- ~ 1 mm detection resolution
- Diagnosis of thickness
- Non-contact
- Laser focusing ~ 1/10 mil resolution
- ± 15 volt 9 amp system

### SEEING THROUGH HEAVY METAL

The purpose of this sensor system is to “see” through heavy metals, typically metals that contain significant grain structures, and to diagnose the material on the the back side of this metal. I proposed this Idea, based on existing concepts for pipeline diagnostics capabilities, and then lead a team which created a prototype sensor and scanning system.

Ultimately a private company was contracted to develop and perfect this sensor such that the following operational requirements were met:

- Non-contact system

- Low voltage and low current
- ~ 1 mm resolution
- Relatively fast and easily deployed

This feasibility study was successfully completed

The pictures scattered across this page are taken taken from this research, and have been approved for general dissemination within the context of this document.