Supplementary Materials

Article

Thermal Ablation and High-Resolution Imaging using a Back-to-back (BTB) Dual-Mode Ultrasonic Transducer: *In vivo* Results

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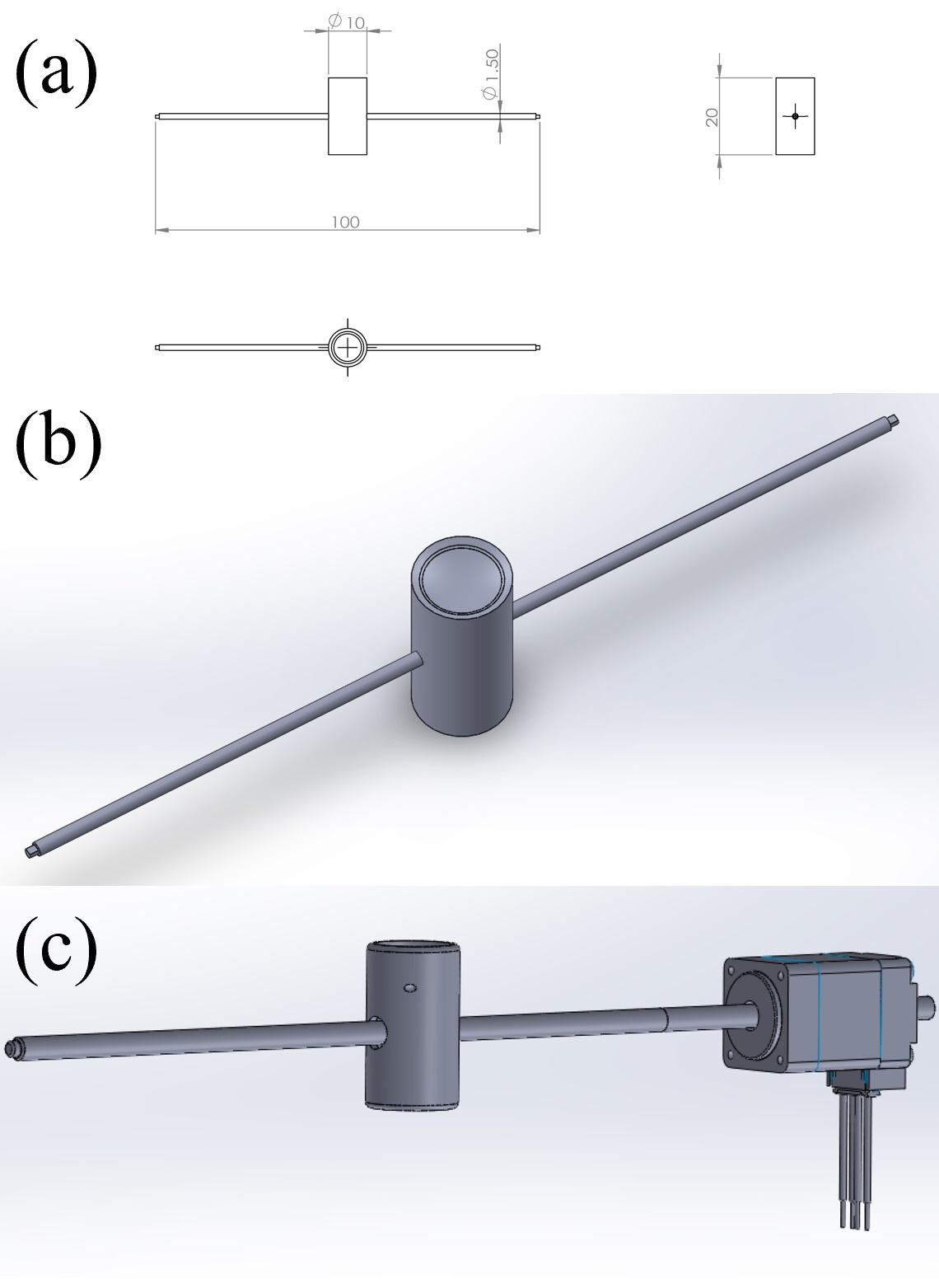
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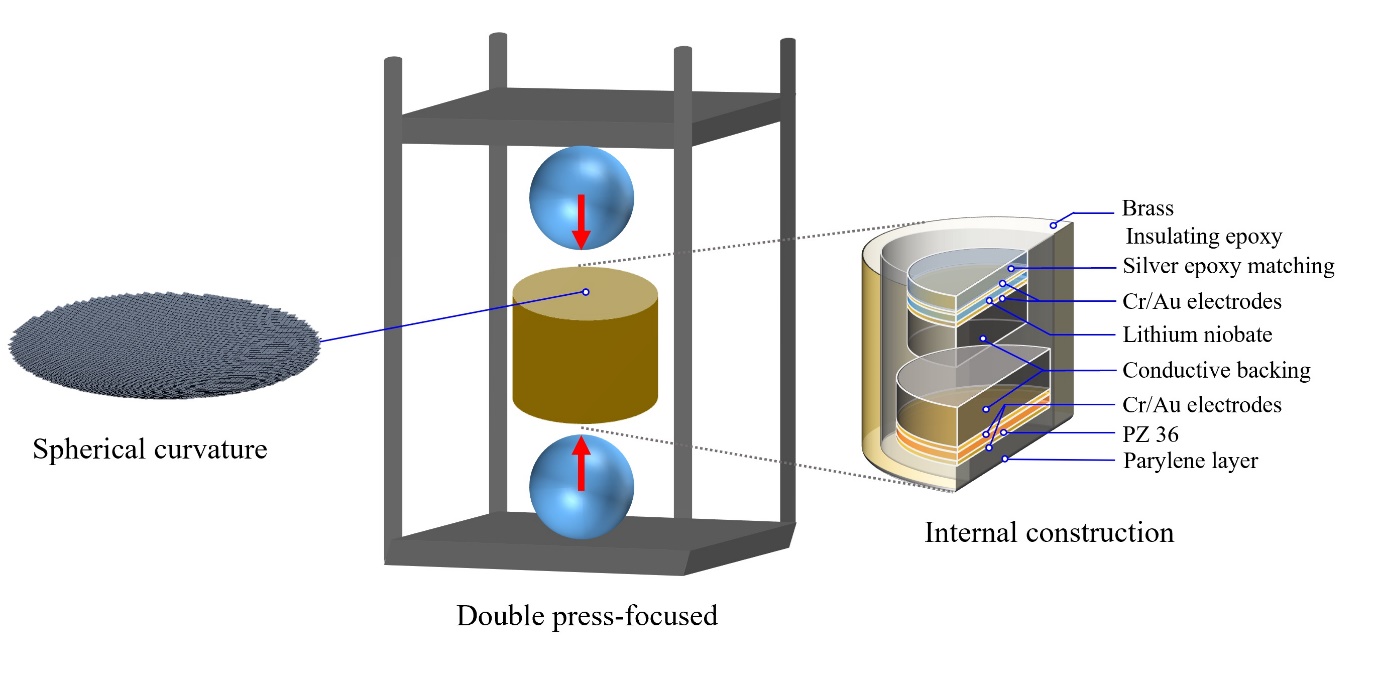
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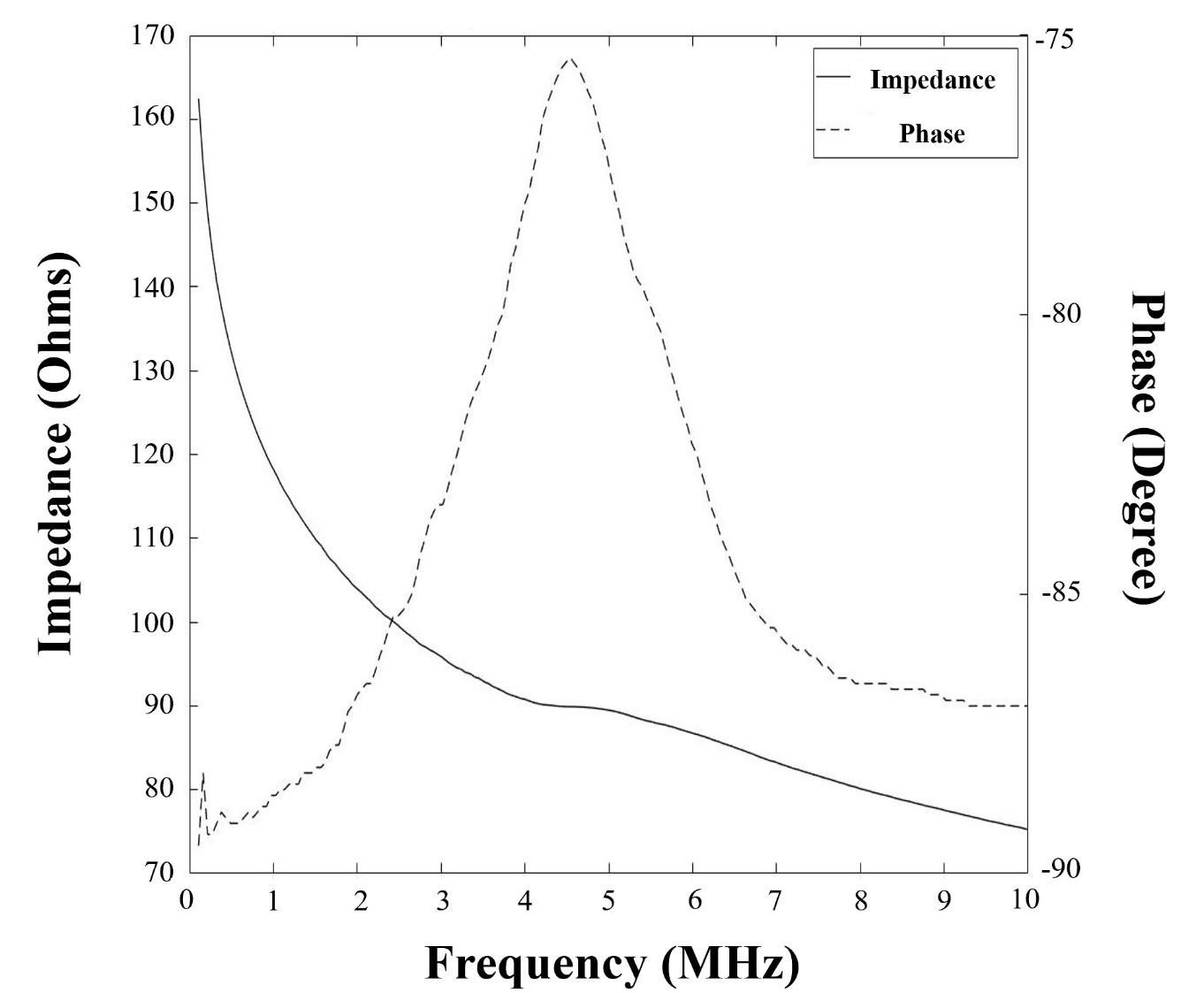
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**Figure S1.** Computer-aided design (Solidworks, Dassault Systèmes Solidworks Corporation, MA, USA) for the back-to-back (BTB) transducer and the stepper motor for the rotation (PKP213D05A, Oriental Motor, Tokyo, Japan)



**Figure S2.** Schematics of a press-focusing method for the BTB transducer



**Figure S3.** The electrical impedance and phase of the HIFU transducer measured by impedance analyzer (E4990A, Keysight Technologies, Santa Rosa, CA, USA)

**Video S1.** 2D B-scan frame collection.B-scan ultrasound images before and after treatment with arrows showing liver and small intestine. Rectangular box represents the thermal ablation region due to HIFU. Total duration: 28 seconds. Frame rate: 20 f/s

**Video S2.** 2D C-scan frame collection.C-scan ultrasound images before and after treatment with arrows showing bone (blue color) and liver (yellow and red color). Because of a strong ultrasound reflection from bone, data below bone was only acquired for imaging. Rectangular box represents the thermal ablation region generated after HIFU. Total duration: 27 seconds. Frame rate: 20 f/s