

Fig. 7. Variation of thermoelastic responses with different tube diameters. The tubes are filled with glycol and have the following diameters: (a) 2.0 cm, (b) 1.6 cm, (c) 1.5 cm, (d) 1.2 cm.

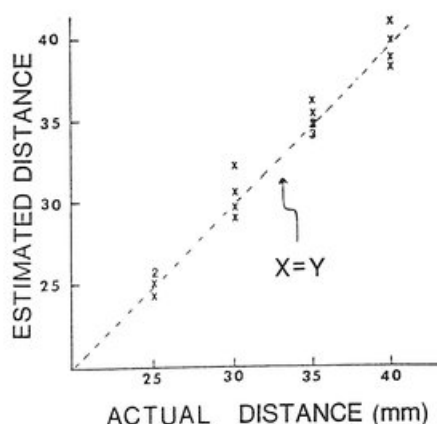


Fig. 8. Scatter diagram for the computer-estimated distance versus actual distance. The numeral 3 denotes that three sets of estimated data have the same value.

In summary, these experimental results show that the peak height of microwave pulse-induced thermoelastic response depends on the size and composition of test objects. This information is useful in identifying objects of unknown composition or size. Specifically, two test objects could be detected with a spatial resolution of 0.9 cm. These preliminary results indicate that a microwave-induced thermoelastic pressure wave system may provide valuable infor-

mation for imaging tissue absorption and thermal expansion properties.

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