ELASTIC CONSTANTS

together contrasted to the stronger bonds formed in the γ and γ_1 structures.

The ultrasonic data suggests the possibility of high pressure, first order polymorphic transitions in γ and γ_2 . These proposed transitions should be examined using high pressure x-ray diffraction techniques.

The authors would like to thank Mr. K. L. Dunn and Dr. R. S. Gilmore for their invaluable help in this project. Dr. Gilmore designed much of the experimental apparatus and technique; Mr. Dunn and Dr. Gilmore developed the method of analysis, and Mr. Dunn wrote the computer programs used for the analysis.

References

- 1. D. E. Grenoble and J. L. Katz, J. Biomed. Mater. Res., 5, 489 (1971).
- 2. J. L. Katz and D. E. Grenoble, J. Biomed. Mater. Res., 5, 515 (1971).
- 3. R. S. Gilmore, "The Elastic Constants of Fifteen Materials as Functions of Pressure and Their Equations of State," Ph.D. Thesis, Rensselaer Polytechnic Institute (1968).
- 4. H. Jones, Proc. Roy. Soc., (A), 144, 225 (1934).
- 5. L. B. Johnson, Jr., J. Biomed. Mater. Res., 4, 269 (1970).
- 6. P. W. Bridgman, "Solids Under Pressure," McGraw-Hill, New York (1963).
- 7. A. J. Murphy, J. Inst. Met., 35, 107 (1926).
- 8. G. D. Preston, Appendix to A. J. Murphy, J. Inst. Met., 35, 107 (1926).
- 9. G. V. Raynor and A. Lee, Acta Met., 2, 616 (1954).
- 10. K. Z. Schubert, Metallkinde, 41, 423 (1950).

Received October 12, 1970

3

4