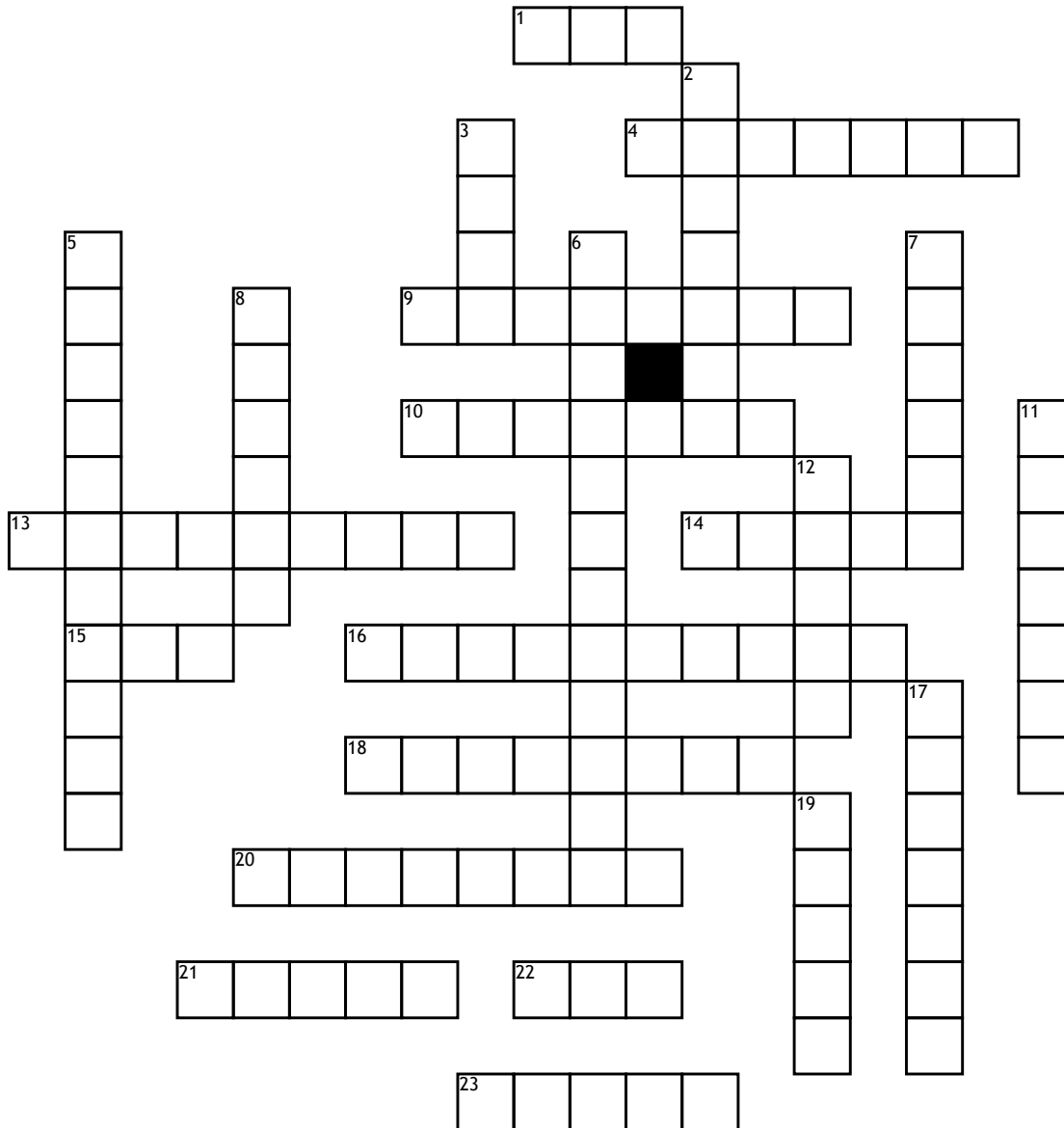


# Transducer Study Tool



**Across**

- 1. A man-made ferroelectric material also known as lead zirconate titanate.
- 4. Part of transducer that reduces ringing and has a high degree of sound absorption
- 9. Damping will \_\_\_\_\_ the efficiency of the equipment.
- 10. A faster PZT has a higher frequency and a \_\_\_\_\_ crystal.
- 13. A mixture of man-made ferroelectric material that lowers impedance-less reflection and improves resolution.
- 14. Damping and composites create \_\_\_\_\_ pulses and improve resolution.
- 15. Damping lowers the \_\_\_\_\_ because it's reducing the number of cycles in the pulse

- 16. Convert one form of energy to another.
  - 18. There is a need for \_\_\_\_\_ matching layers because the impedance is so great.
  - 20. In front of the crystal and has an impedance between the skin and the active element
  - 21. Damping lowers the SPL and improves \_\_\_\_\_ resolution.
  - 22. In piezoelectric transducers, the quality factor is \_\_\_\_\_
  - 23. The matching layer is aluminum powder also called \_\_\_\_\_ resin.
- Down**
- 2. Not naturally piezoelectric
  - 3. For pulse wave, the bandwidth is \_\_\_\_\_.

- 5. Protects, insulates, and orientation to the transducer.
- 6. Electrical energy (voltages) converts into sound energy.
- 7. The speed of the PZT has a \_\_\_\_\_ relationship with the frequency.
- 8. Continuous wave has a \_\_\_\_\_ bandwidth.
- 11. Resonant frequency is determined by the \_\_\_\_\_ thickness
- 12. A slower PZT has a \_\_\_\_\_ frequency
- 17. The most effective thickness is \_\_\_\_\_ the wavelength of sound in the PZT.
- 19. Resonant or operating frequency is determined by the element thickness and \_\_\_\_\_ of the PZT.