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(57) Abstract :
The present invention discloses a multi-mode acoustic resonance chamber (100) designed for advanced wave propagation experiments. It comprises modular sidewalls (102), reconfigurable acoustic panels (108), and a programmable speaker array (104) for generating varied acoustic modes. Embedded sensors (110) and a waveform analyzer (112) enable real-time monitoring of pressure variations. A transparent ceiling panel (114) allows optical visualization of wavefronts. The chamber supports customizable boundary conditions and variable excitation, making it ideal for physics education, acoustic diagnostics, and research applications.

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