

Abstract Submitted
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Excitation and Characterization of Chladni Plate Patterns SHANNON BOURKE, ERNEST BEHRINGER, Eastern Michigan University — When a thin metal plate with a small amount of sand on it is made to vibrate, aesthetically pleasing sand patterns can form along the nodal lines of the plate. These symmetric patterns are called Chladni Patterns. Students taking PHY 101 Physical Science in the Arts at Eastern Michigan University create these patterns by pulling a violin bow across the edge of a plate, or by using a mechanical oscillator to drive the center of a plate. These two methods only allow a small subset of all possible points on the plate to be excited. We designed and built an electronic device that allows its user to excite the plate at *any* point. We present patterns created with this electronic device and other methods, and describe ways to model the observed patterns.

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