Piezoelectric Energy Generation Study – Presentation Summary

Opening Statement
Allow me to present the results of our study. We focused on how the number of piezoelectric buttons, the type of button material, and the slab composition influenced voltage generation.

1. Effect of Button Count
Our data showed a direct relationship between the number of buttons and voltage output. In cement slabs with calcium carbonate, one copper button produced about 1.06 volts, three buttons generated 2.11 volts, and eight buttons achieved the highest average of 2.95 volts. Ceramic slabs showed a similar pattern, with voltage increasing from 1.07 volts with one button to 2.91 volts with eight buttons. This confirms that adding more piezoelectric components enhances energy generation.

2. Copper vs. Iron Performance
When comparing copper and iron-based buttons, copper consistently produced higher voltages. In cement slabs, the difference became significant with eight buttons, where copper reached 2.95 volts compared to iron's 2.42 volts. In ceramic slabs, copper also outperformed iron, producing 2.91 volts against 2.50 volts. These results highlight copper's superior efficiency in energy harvesting.

3. Slab Composition
Interestingly, when comparing cement with calcium carbonate slabs to ceramic slabs, we found no significant difference in voltage output. Copper buttons averaged around 2.04 volts in cement and 2.02 volts in ceramic, while iron buttons averaged 1.78 volts and 1.80 volts, respectively. This suggests that both slab types are equally viable bases for piezoelectric systems.

Closing Statement
In summary, our results demonstrate three key points: voltage increases with more buttons, copper-based buttons are more efficient than iron-based ones, and slab composition does not significantly affect performance. These findings provide strong evidence that copper-based piezoelectric systems, regardless of slab type, hold promise for sustainable energy applications.

Presentation Tips

- Highlight trends, not just numbers: Emphasize that voltage increases with button count.
- Use comparisons: Clearly stress copper vs. iron differences.
- Use visual aids such as tables or graphs to show the upward trend.
- End with a summary reinforcing the three main takeaways.