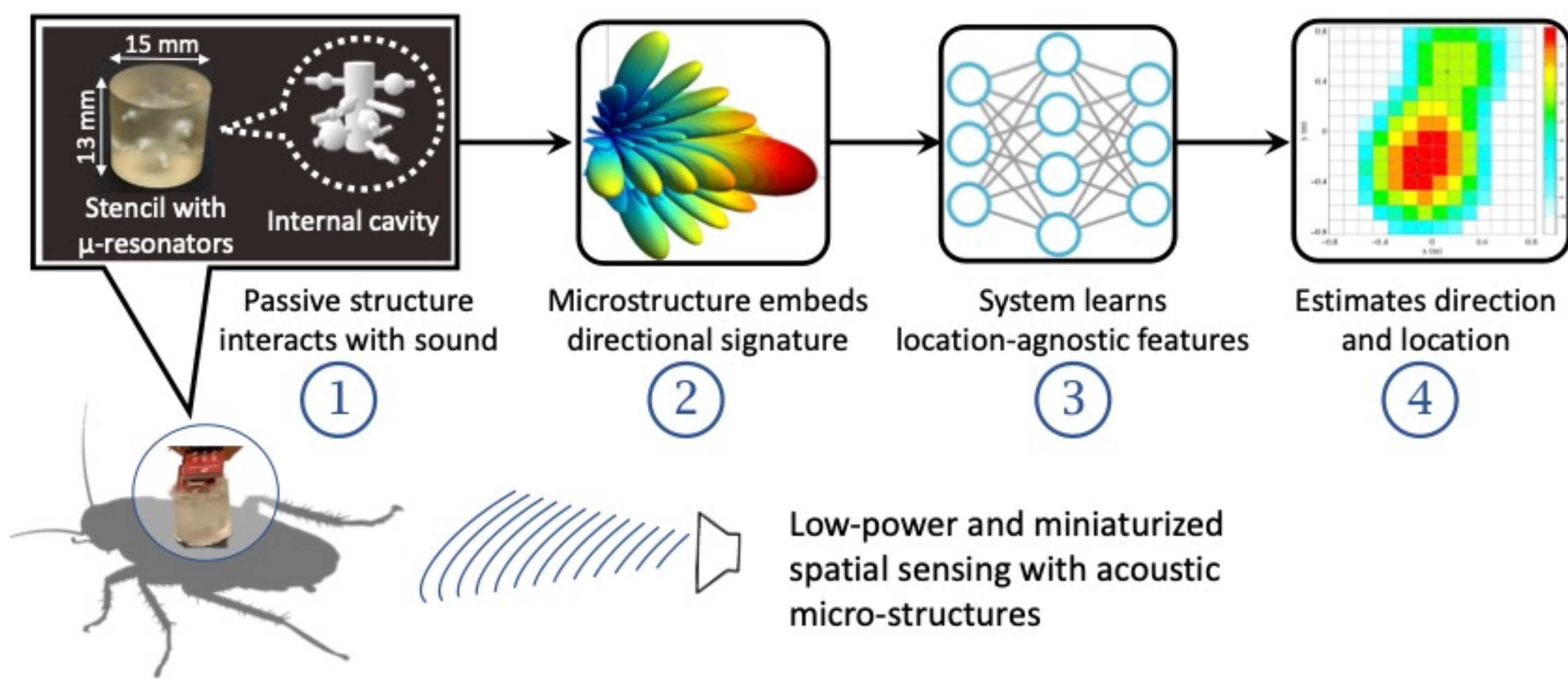
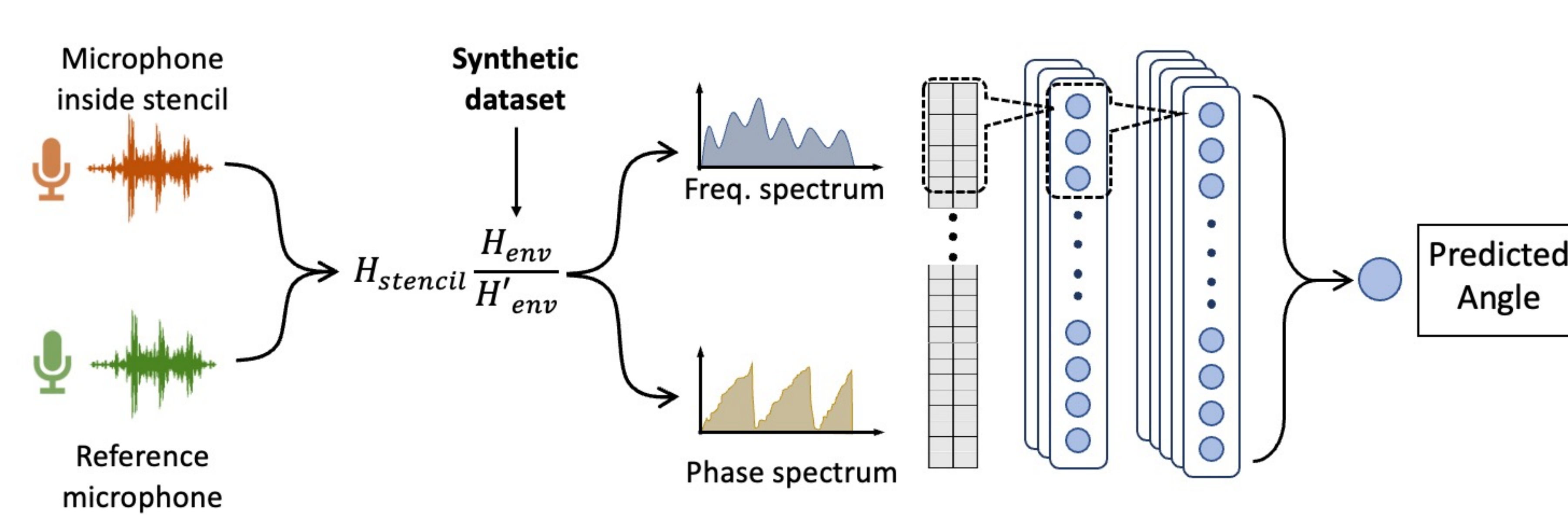


Microstructure-guided Spatial Sensing for Low-power IoT

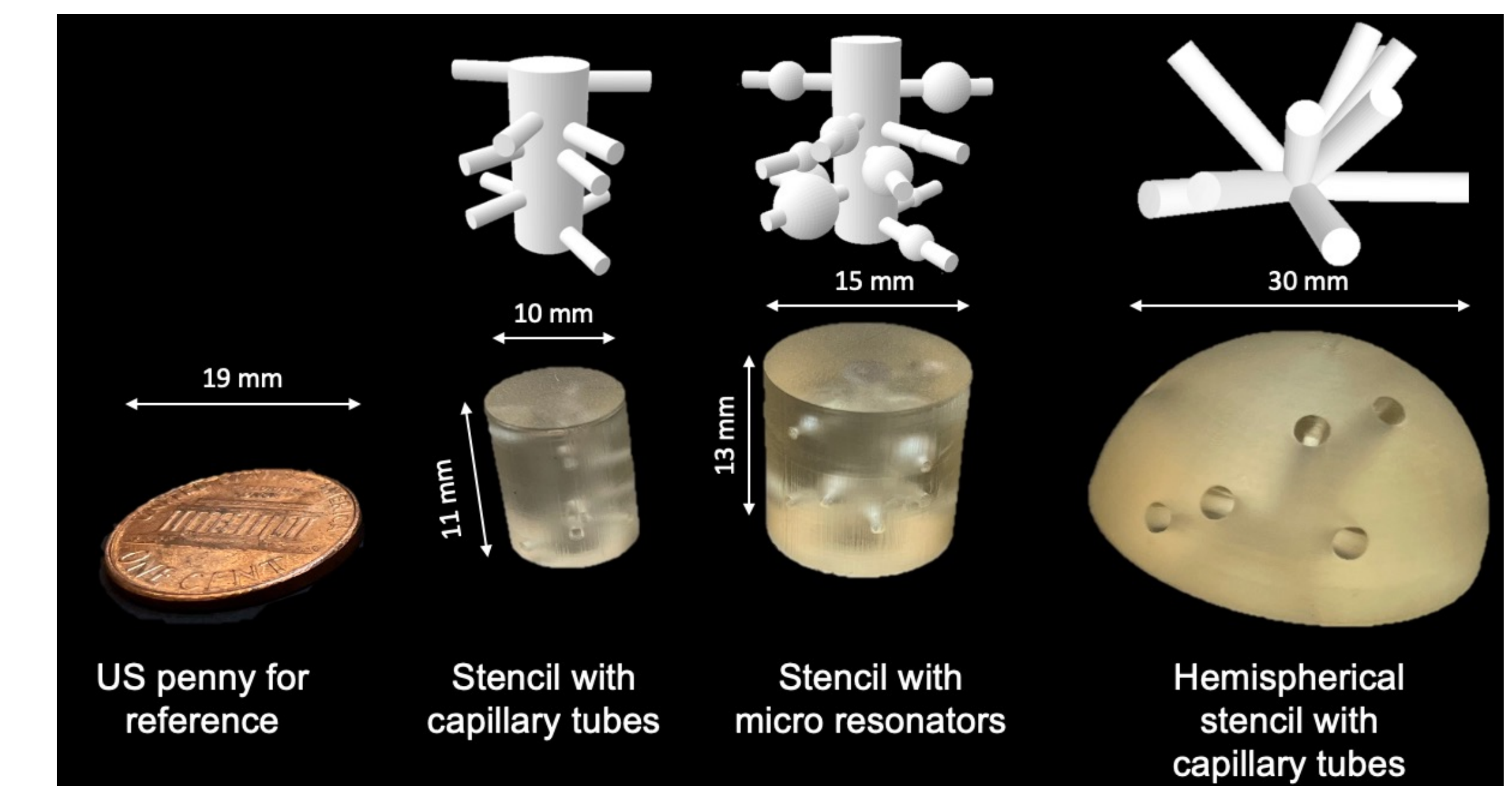
Vision



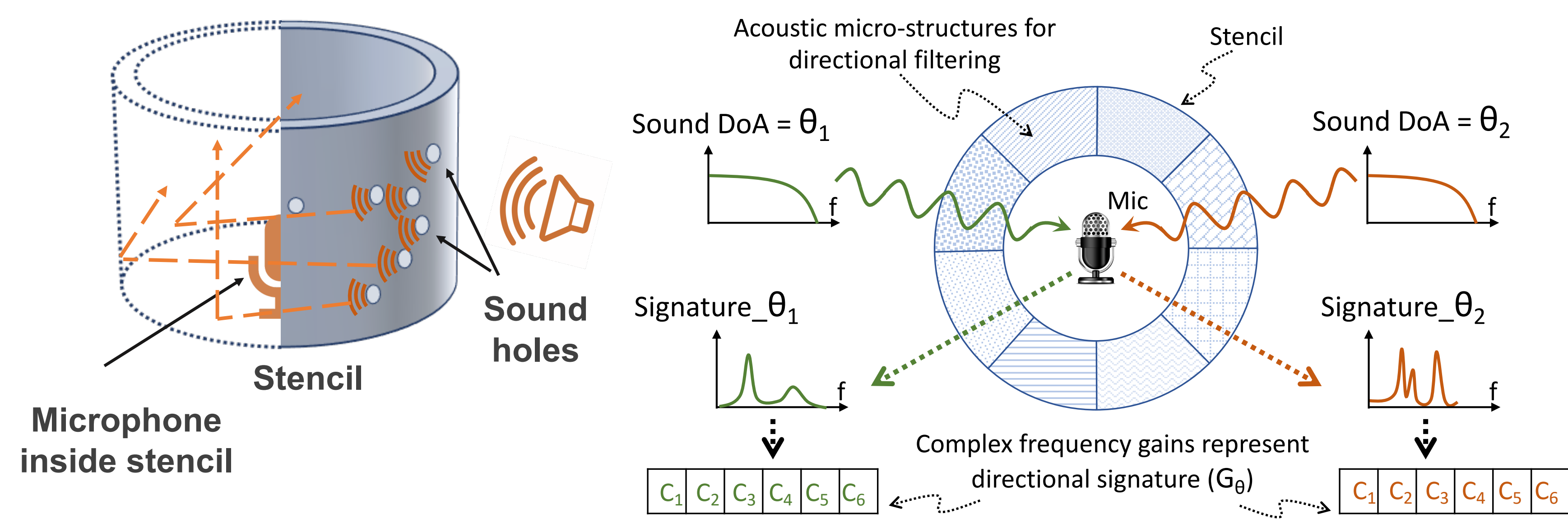
System Design



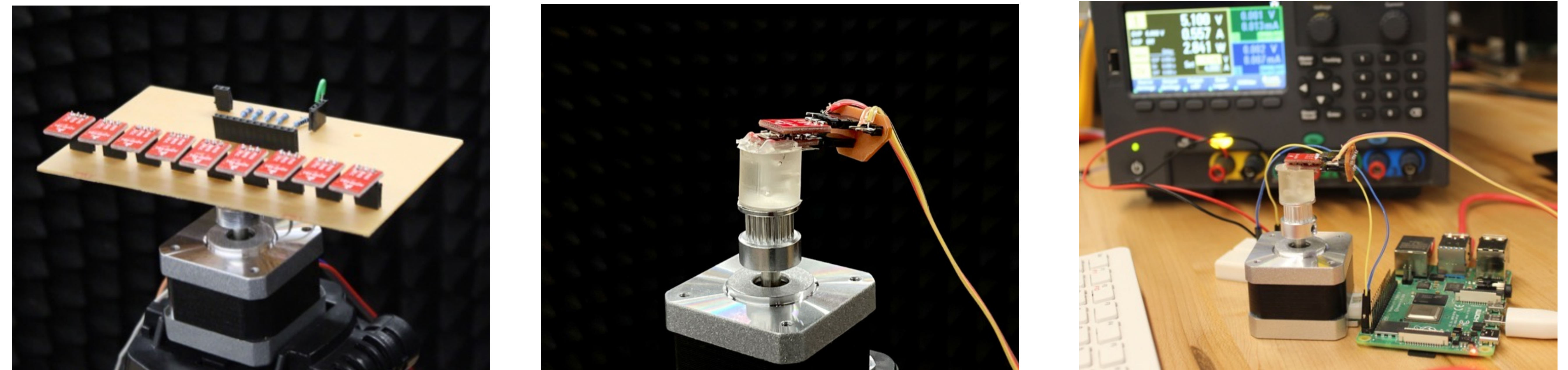
Stencil Design



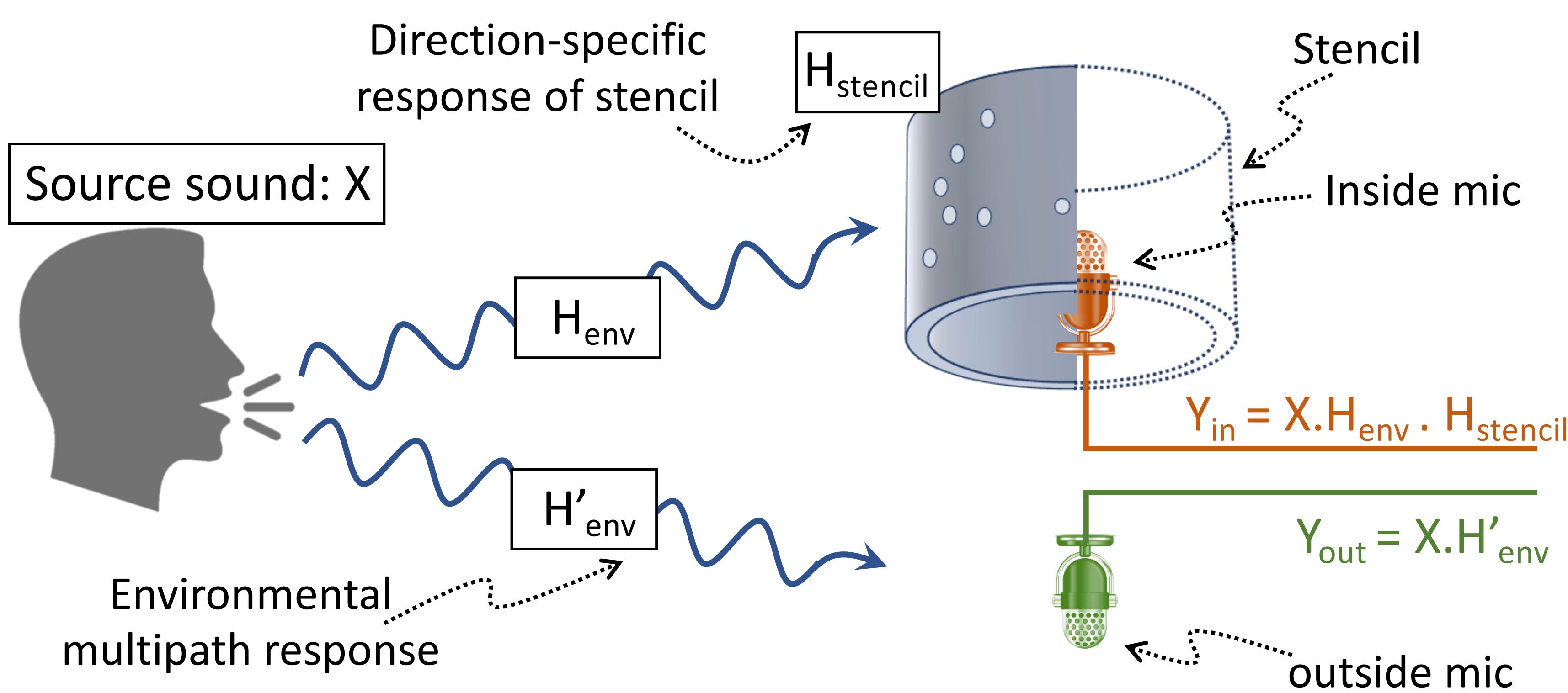
Controlled Multipath



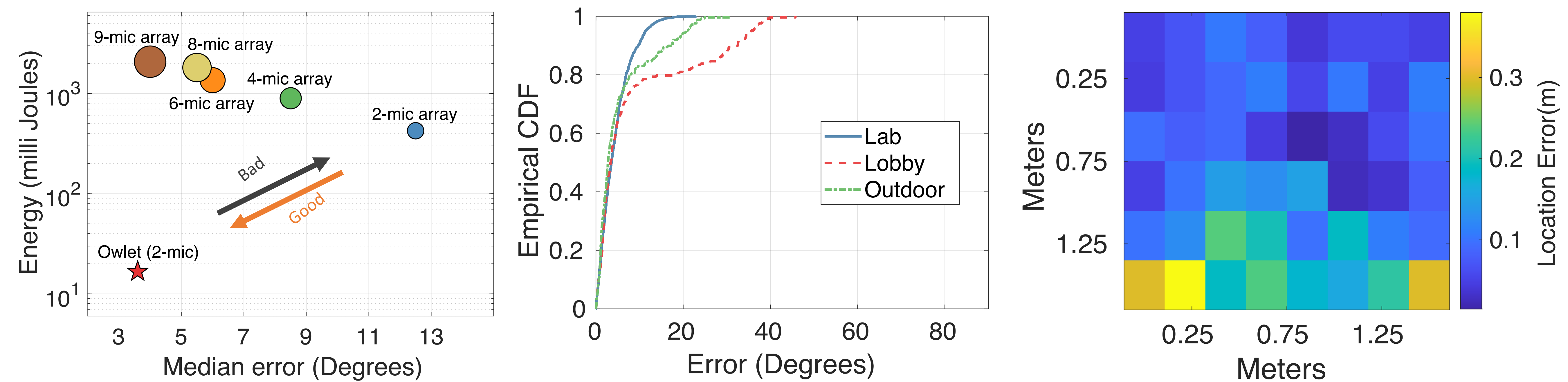
Prototype



Dependency Elimination



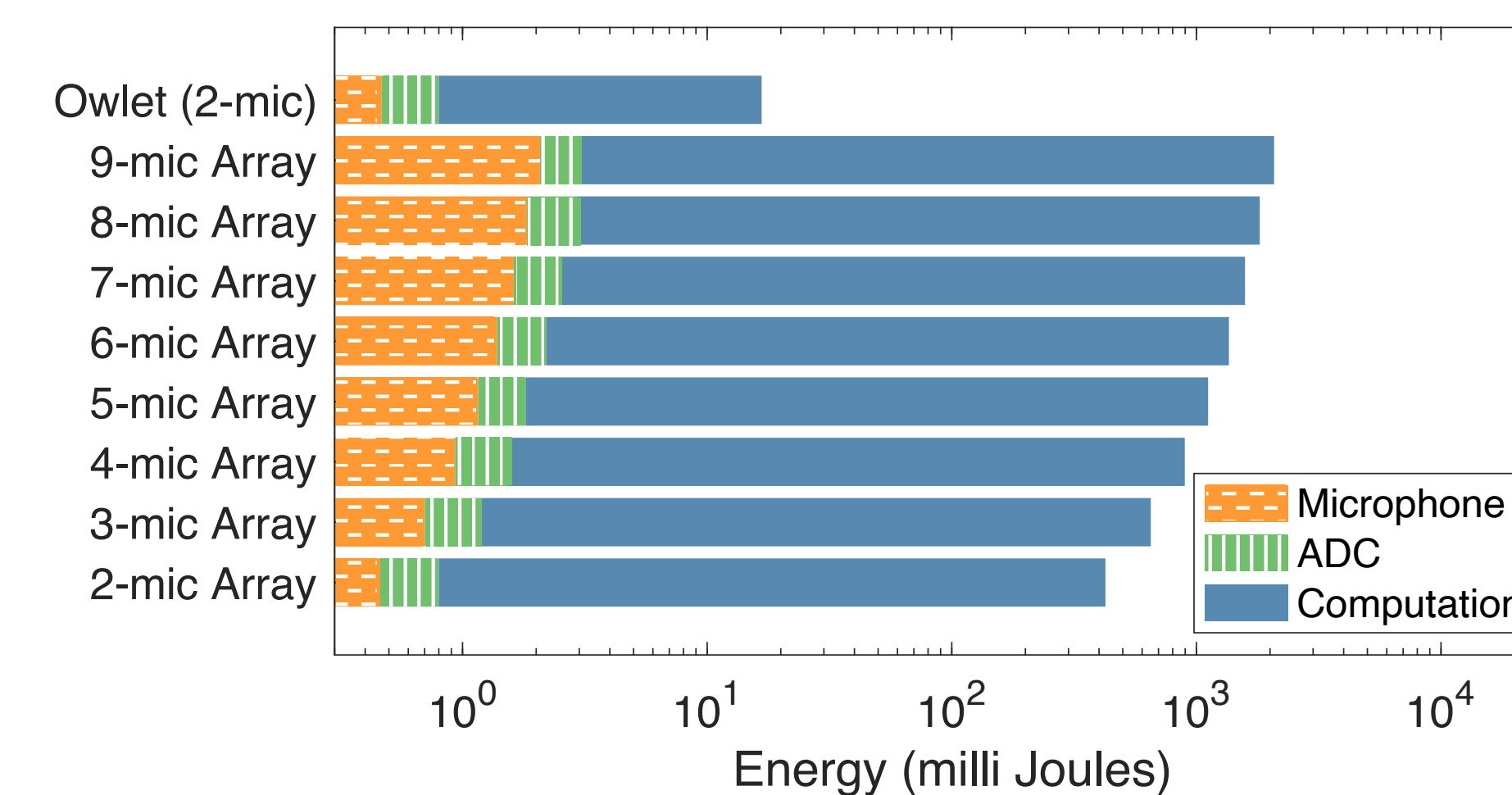
Evaluation



One-time learning

$$\frac{Y_{in} = X H_{env} H_{stencil}}{Y_{out} = X H'_{env}} \rightarrow \text{Dividing} \rightarrow \frac{Y_{in}}{Y_{out}} = \frac{X H_{env} H_{stencil}}{X H'_{env}} = \frac{H_{env}}{H'_{env}} H_{stencil}$$

Depends on external environment



Demo

Teaser: <https://youtu.be/I8THREmABEM>
Presentation: <https://youtu.be/ig45IHUjvis>
Website: <http://icosmos.cs.umd.edu/project-owlet.html>

