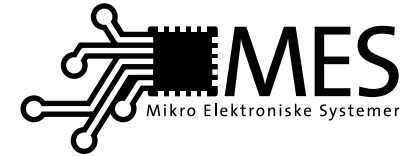




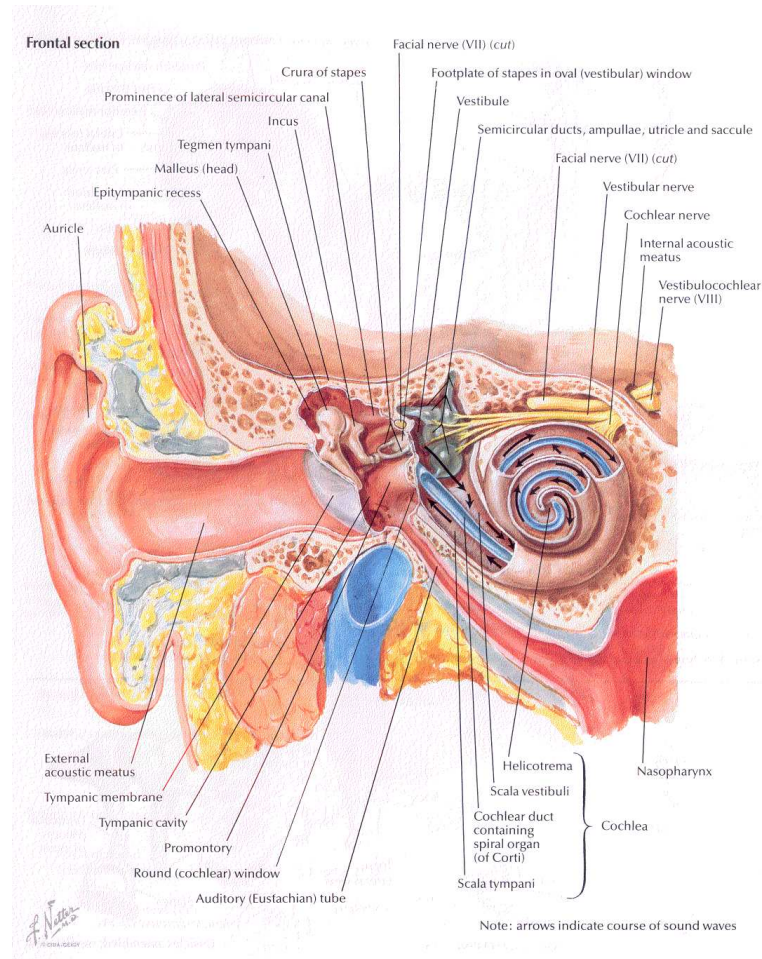
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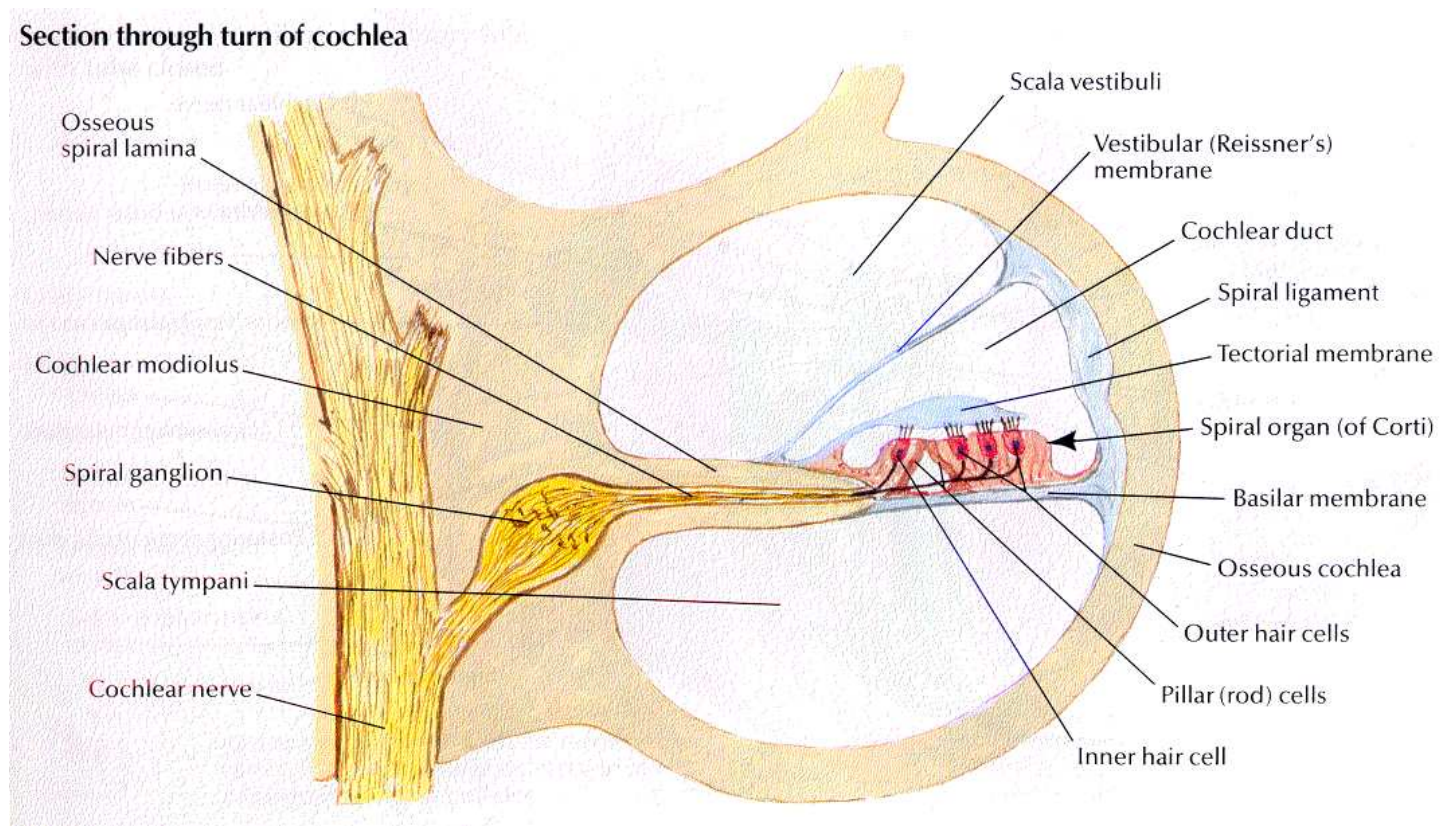
Neuromorphic Electronics

Cochleomorphic Circuits

Ear and Cochlea Cross Section

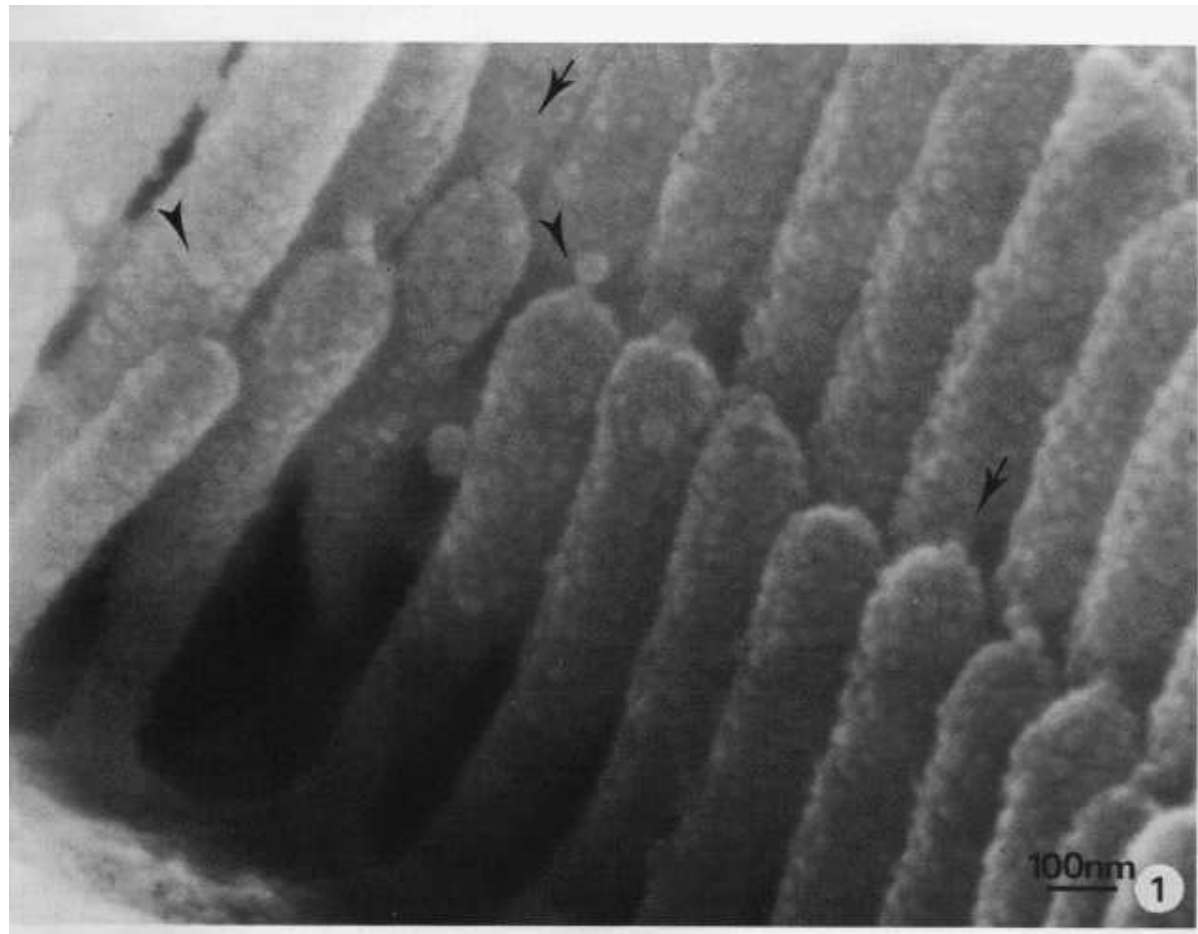


Cochlear Duct Cross Section



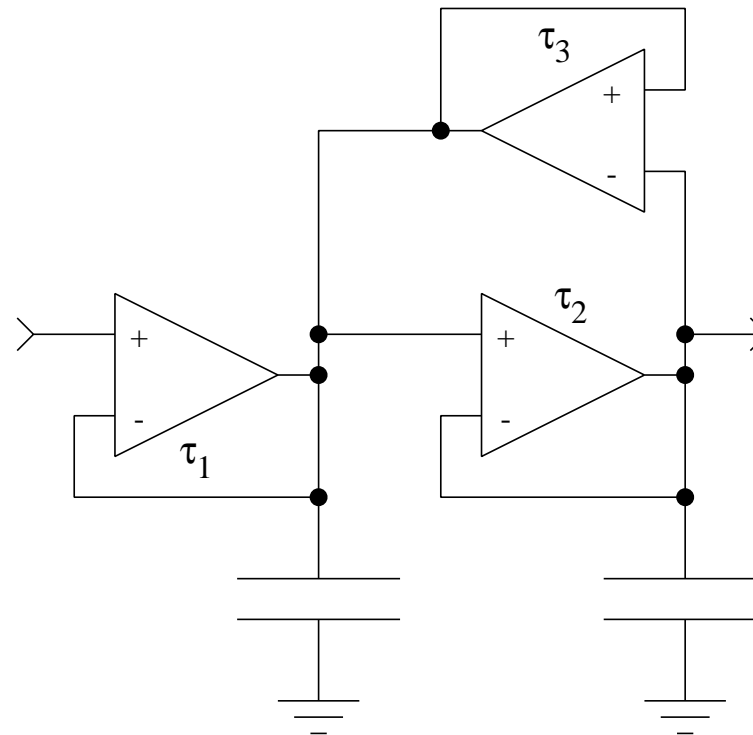


Hairs of Basilar Membrane Hair Cells





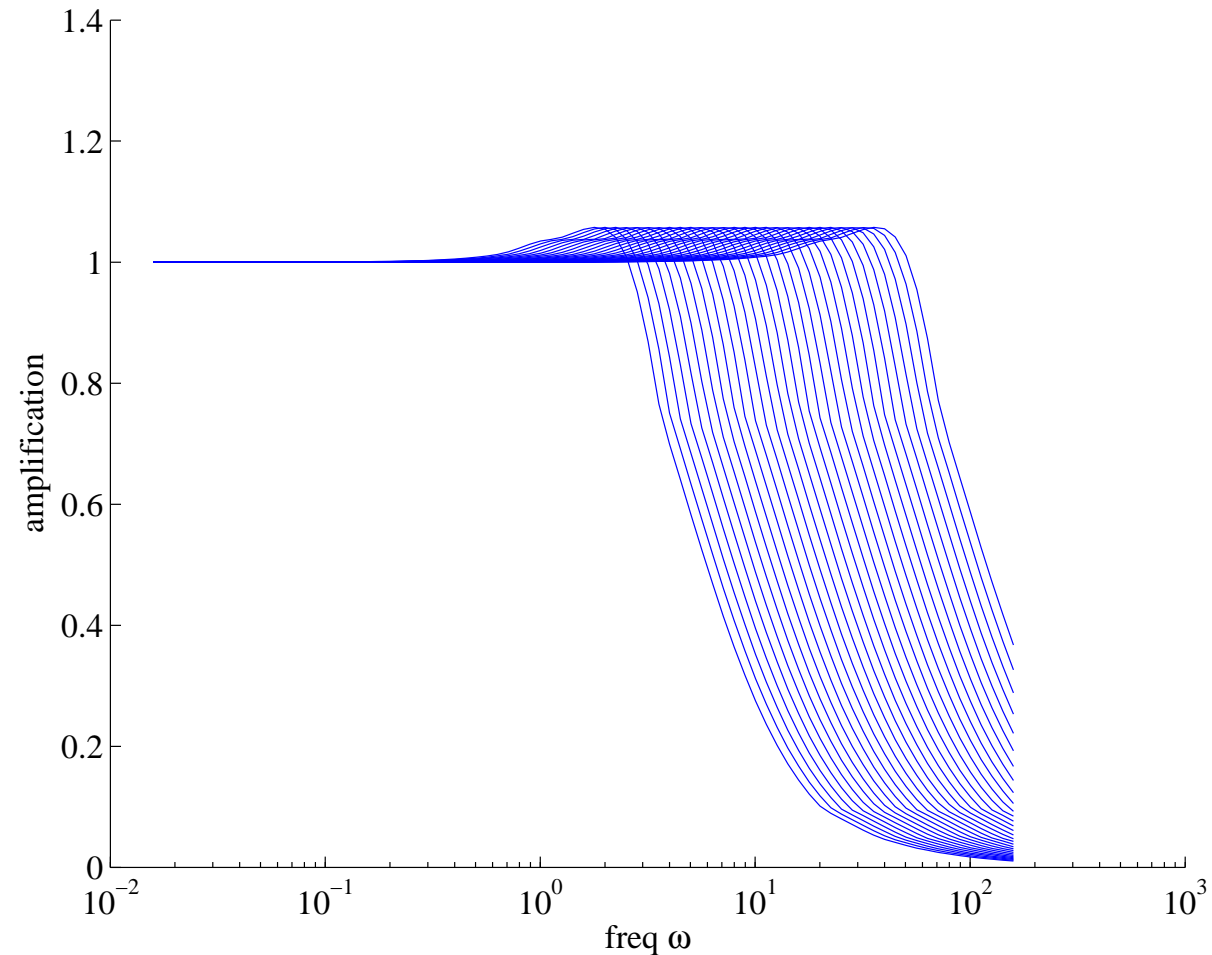
Resonating Second Order Low Pass Filter



$$\ddot{V}_{out} = \frac{1}{\tau_1 \tau_2} (V_{out} - V_{in}) - \left(\frac{1}{\tau_1} + \frac{1}{\tau_2} - \frac{1}{\tau_3} \right) \dot{V}_{out}$$



Second Order Filters in Parallel





Second Order Filters in Cascade

