

EE-517 Bio-Nano-Chip Design

Student Projects - Guidelines for Final Report

- Specifications from the passive chip design:
Highlight the required specifications, such as: linear range, sensitivity, limit of detection, and dynamic range, detection method.

- Bio-CMOS interface:
Appropriately model the bio-CMOS interface taking into consideration the specific application (electrode materials, size, and biofluid of interest). (Original work)

- Circuit design:
Select (or design, the original design is favored) the most appropriate circuit to meet the requirements (CMOS “transistor level” or op-amp “block/PCB level”).

- Figure of the proposed/designed circuitry:
Put at least one figure highlighting the circuit that you have designed (Original work).

- Results:
Prove that the designed circuit is capable of meeting the passive chip requirements. Simulations are highly appreciated. Alternatives are: analytical calculations with literature support. (Original work)

- Figure of the obtained results:
Put at least one figure highlighting the result of your simulation/calculation. (Original work)

- Discussion:
Critically discuss the obtained results (pros/cons of the chosen architecture include a table).

- Novelty:
Identify the key novelty of your proposed active chip.

- References:
List all the references that have been explored during the circuit design process.

- Supplementary Material:
Simulations, theoretical derivations, and other figures.