

# **APPENDIX A**

## **Guidelines for Formal Report Writing**

A formal report is expected to include the following sections

### *Cover Page*

Contains experiment number and title, student name, partners' names, date and abstract.

### *Abstract*

A few statements that summarize the work done in the experiment, the general procedure and results and observations.

### *Introduction*

A brief summary of the theoretical background needed to understand the experiment. This background may include laws and formulas, models, equivalent circuits, block diagrams, etc. A clear statement of objective should also be included in this section.

### *Procedure*

A list of steps done in the experiment. Each step should be briefly explained and outlined. The circuit connections, block diagram and/or modifications to the handout procedure should be included in the appropriate step. All components in the circuit connections should be marked clearly. (Do not copy the lab manual; write your own statements)

### *Results*

The experimental results obtained from each of the steps in the procedure. All data should be tabulated.

### *Discussion of Results*

A comprehensive evaluation of the results. This evaluation includes the following:

- Calculation of theoretical values.
- Plots of experimental and theoretical values.
- Error analysis (calculation of % error associated with each data set).
- Discussion of errors and ways to reduce them.
- Any specific observations and comments.

### *Conclusions*

A few statements discussing the following:

- A general statement about the experiment and how close it accomplishes the objectives. Problems and Conclusions of the experiment regarding procedure, equipment, accuracy, learning benefits, etc.
- Answer to questions (those in the lab manual and those given by instructor).

### *Important notes*

- Submitting identical or even similar reports will be considered as act of cheating.
- All pages should be numbered.
- All figures (including circuits diagrams, plots, block diagrams, etc.) should be numbered and given meaningful captions and legends (see examples on next page).
- tables should be numbered and given meaningful captions (see examples on next page).
- Landscape figures or tables should be oriented correctly.
- Report grade will be based on the quality of the above sections and on correct format.
- Use of computers in word setting and plotting is highly encouraged.

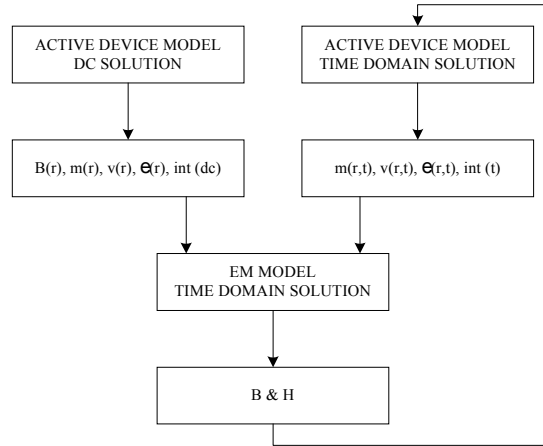


Figure 1: Flowchart describing the sequence of operations in the coupled model

Simulation Parameter	Value
Drain and source contacts	0.5 $\mu\text{m}$
Gate length	0.25 $\mu\text{m}$
Gate source separation	0.4 $\mu\text{m}$
Drain gate separation	0.5 $\mu\text{m}$
Active layer thickness	0.1 $\mu\text{m}$
Buffer layer thickness	0.2 $\mu\text{m}$
Active layer doping	$2.0 \times 10^{17} \text{ cm}^{-3}$
Buffer layer doping	$1.0 \times 10^{14} \text{ cm}^{-3}$
Gate source voltage	-0.5 V
Drain source voltage	3.0 V

Table 1: Simulation Parameters Used in Static FET Characterization

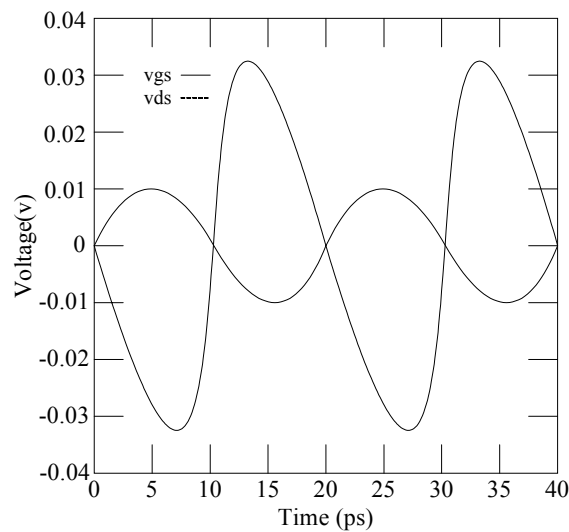


Figure 2: Typical input output signals for  $L_{gg} = 0.25 \mu\text{m}$  and  $f = 80 \text{ GHz}$