MOSFETs and IV Curves

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1 Introduction

MOSFETs are used in almost every single computer. This lab will go over the creation of MOSFETs in Electric VLSI and LTSpice and their IV curves.

2 Materials and Methods

Our instructions for the lab are found in `http://www.yilectronics.com/Courses/ENGR338L_CE/f2021/lab3_DAC_Layout/Lab4.html`. Here we first make the schematic with the spice model and make the N/PMOS width 10. Then we create the layout of the NMOS and PMOS by adding N/PMOS, N/PActs, N/PWells and metal 1 then wireing them together. To be sure everything is connected correctly, we test using DRC and ERC checks. Finally we add the LTSpice code to each schematic and layout and run it.
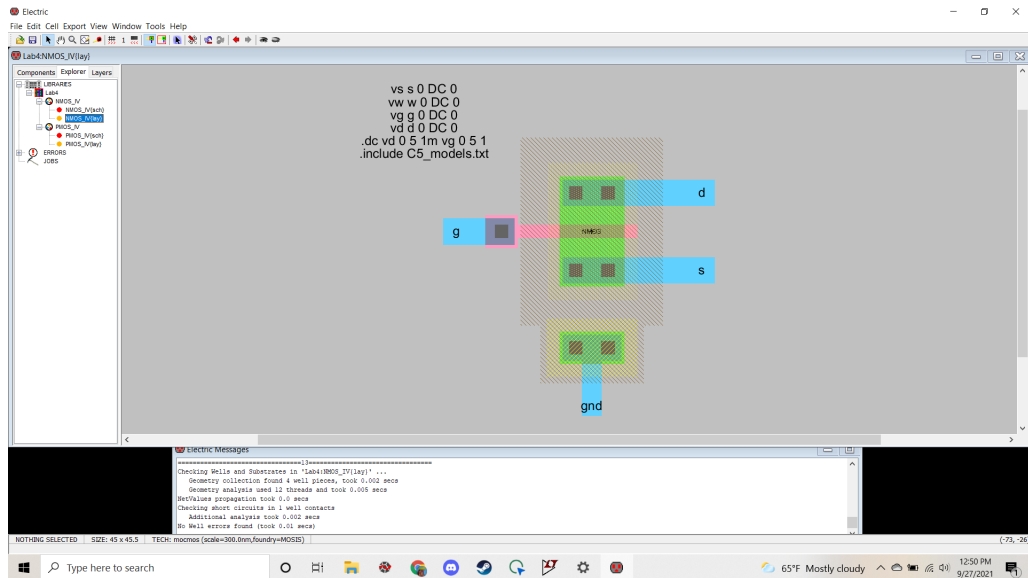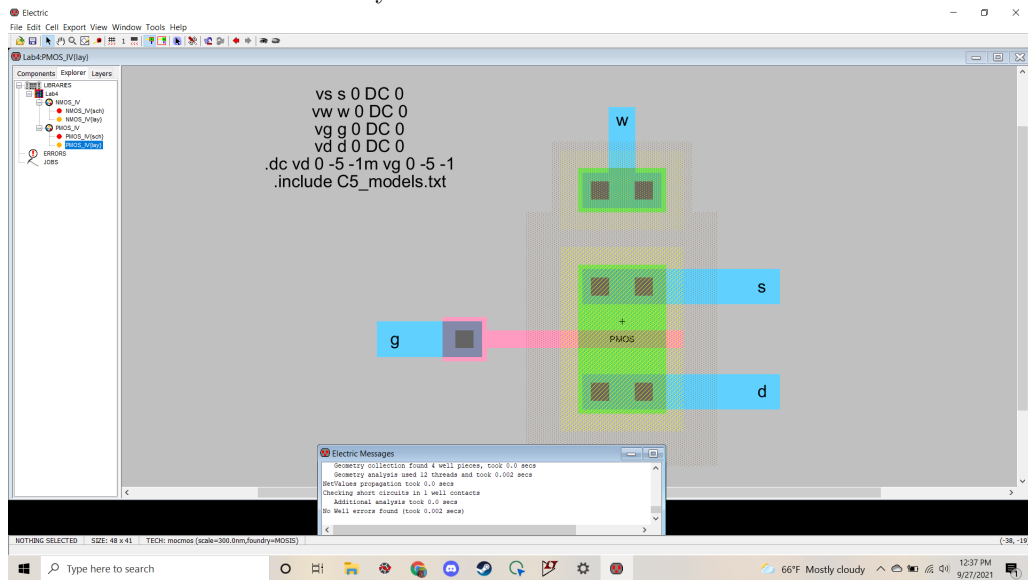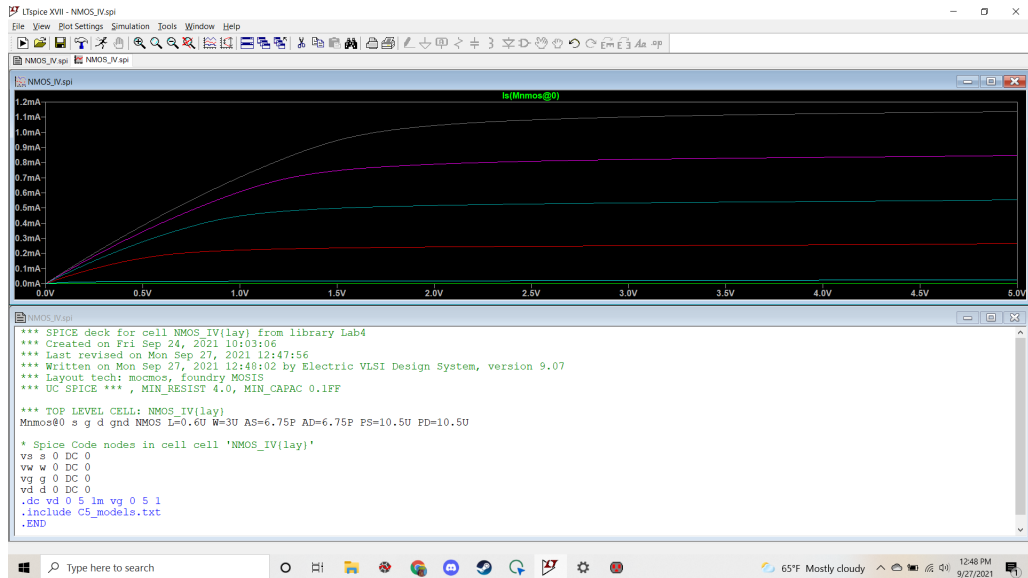
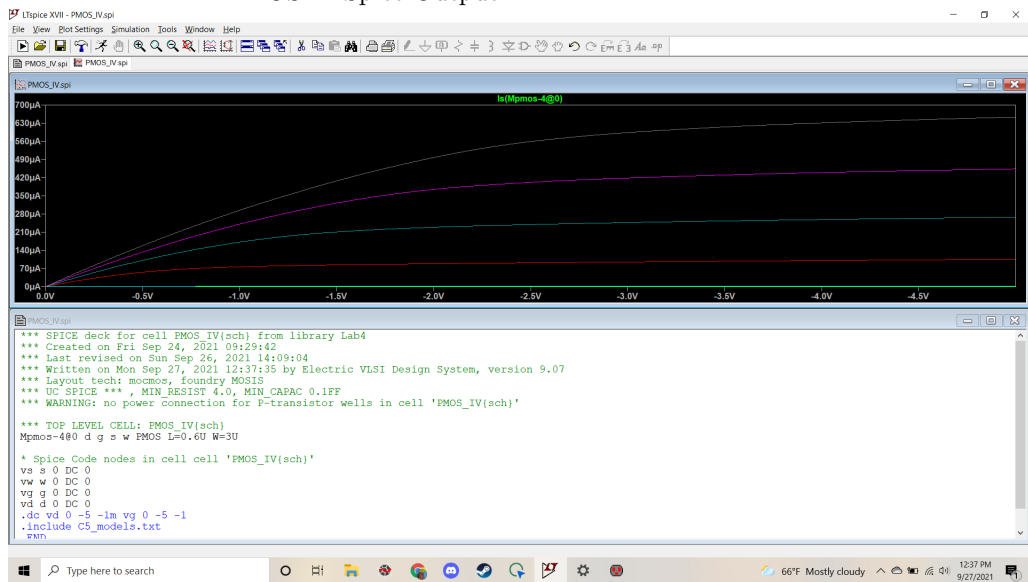# 3   Results
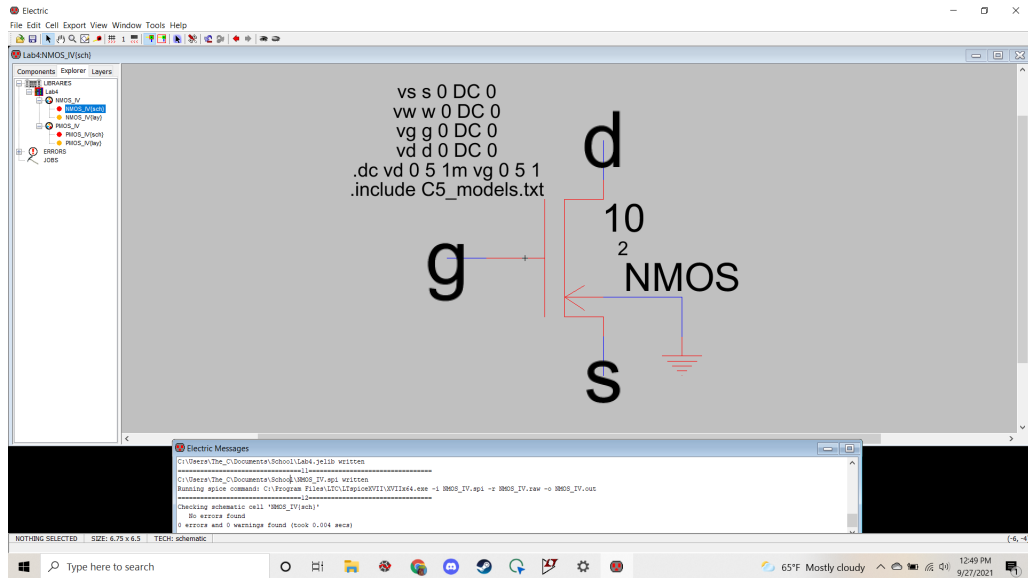
NMOS Schematic
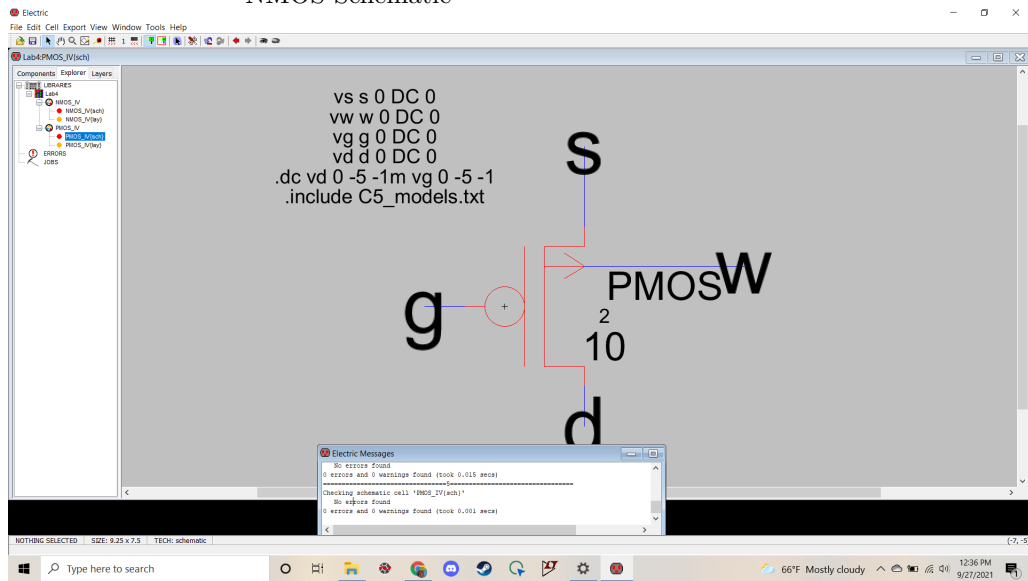
PMOS Schematic

NMOS Layout

PMOS Layout

NMOS LTSpice Output

PMOS LTSpice Output

4 Discussion

Since the simulation ran with no errors and the LTSpice output gave us the correct IV curves that we expect from NMOS and PMOS, the creation of the MOSFETs were successful.