



Faculty of Engineering and Technology
Department of Electrical and Computer Engineering

ENEE 2103

CIRCUITS AND ELECTRONICS LABORATORY

Experiment _4, Pre-Lab _10

Filters

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Date: 13/12/2021

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1. Part A (Passive filters) :

1.1 First Order Circuits:-

⇒ Circuit using PSpice:

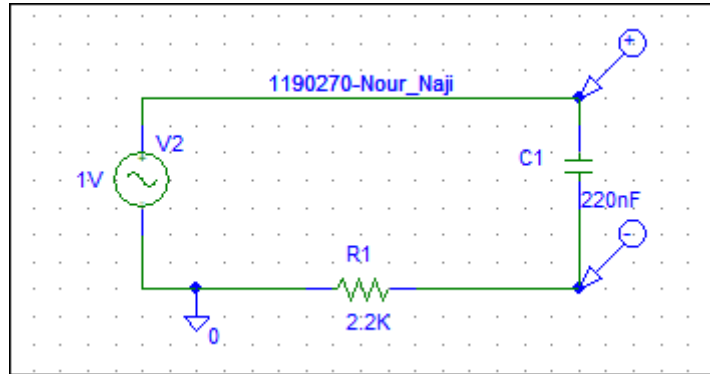


Figure 1. 1

- Magnitude of V_{R1} and V_{C1} graph in decibels:

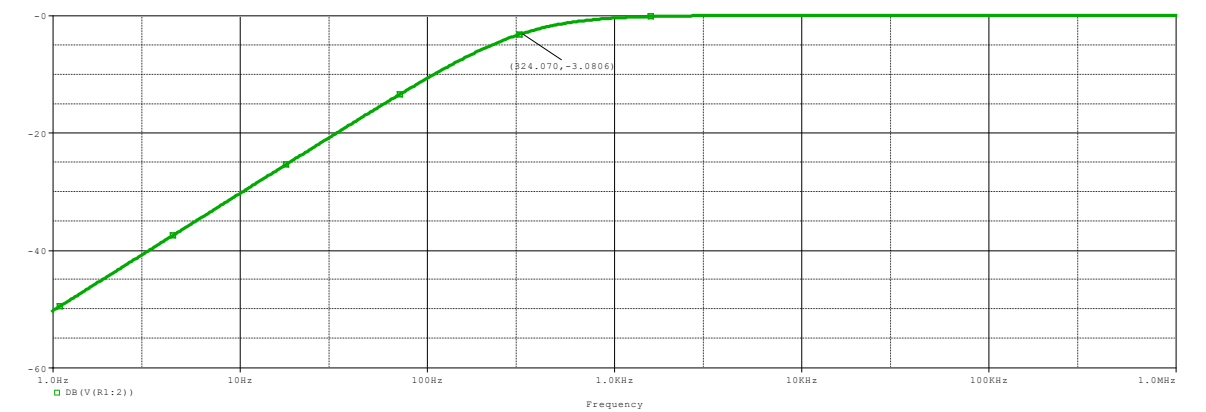


Figure 1. 2

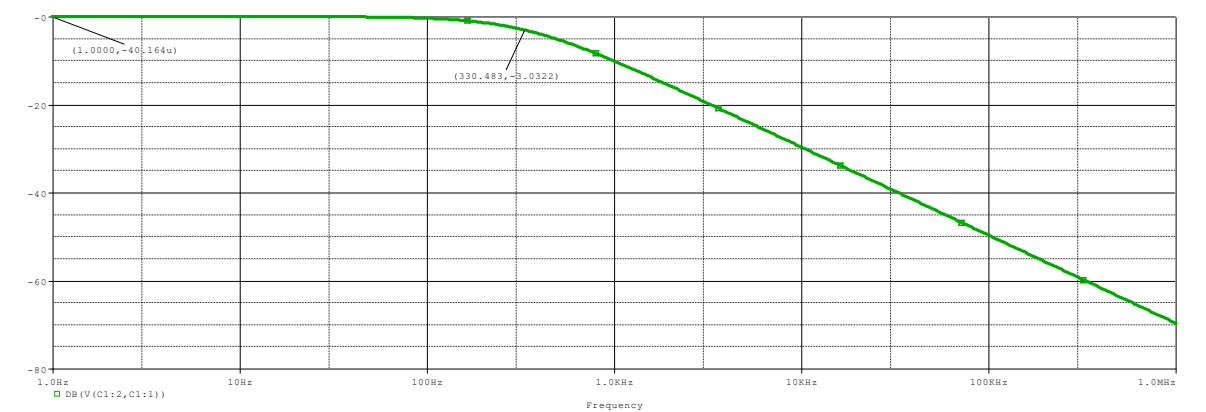


Figure 1. 3

- Phase of VR and Vc in degrees:

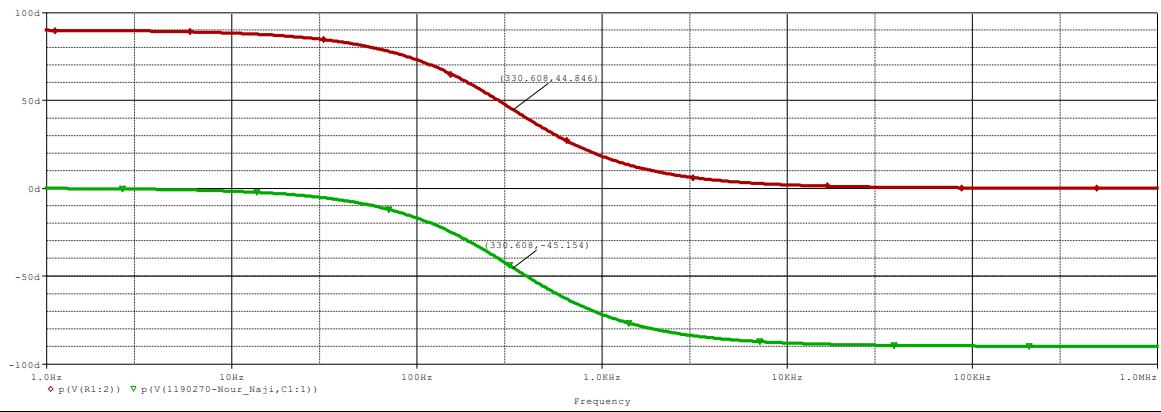


Figure 1.4

1.2 Second Order Filters:-

⇒ Circuit using PSpice:

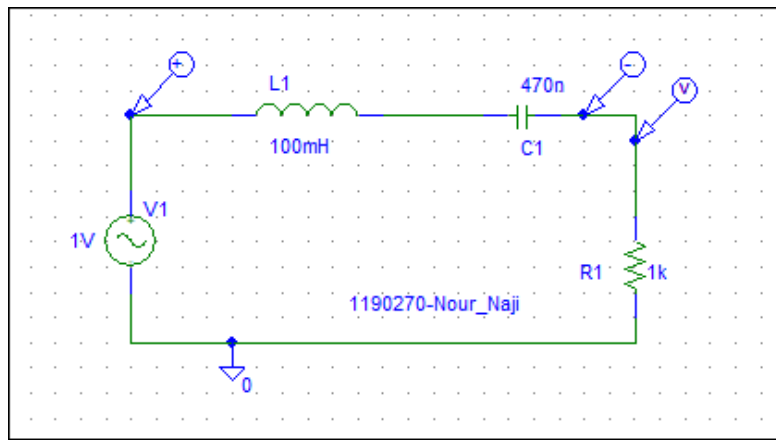


Figure 1.5

- Magnitude of V_R and (V_C+V_L) graph in decibels:

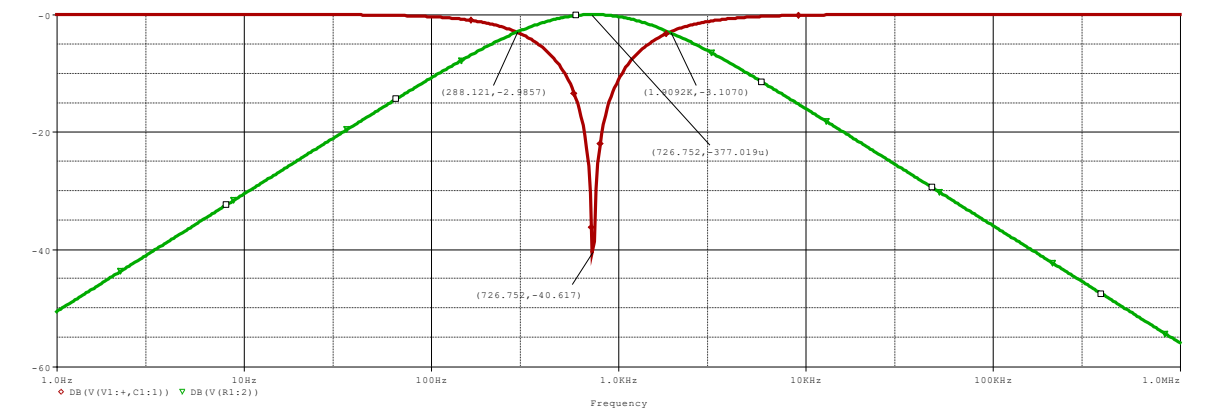


Figure 1.6

- Phase of V_R and (V_C+V_L) graph:

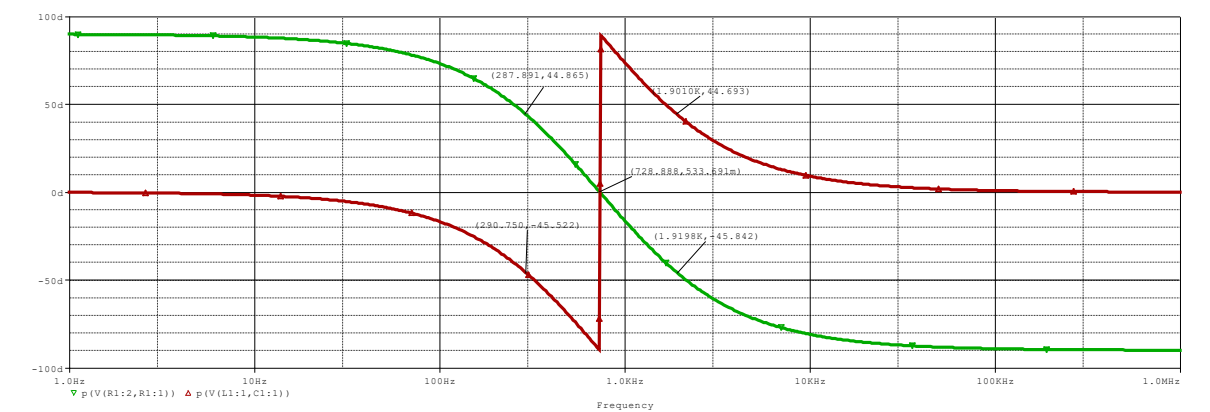


Figure 1.7

- Plot of $= \frac{VR}{Vi}$

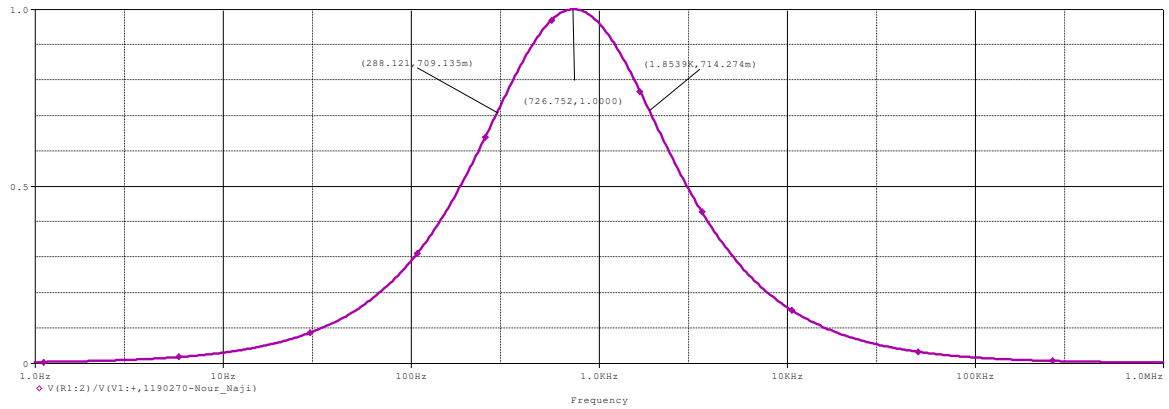


Figure 1. 8

- Plot of $= \frac{VC + VL}{Vi}$

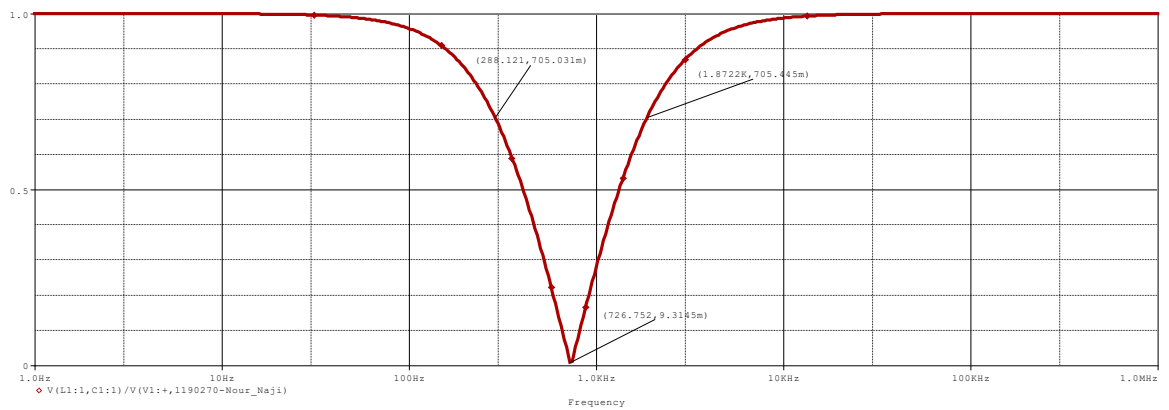


Figure 1. 9

2. Part B (Active filters) :

⇒ Circuit using PSpice:

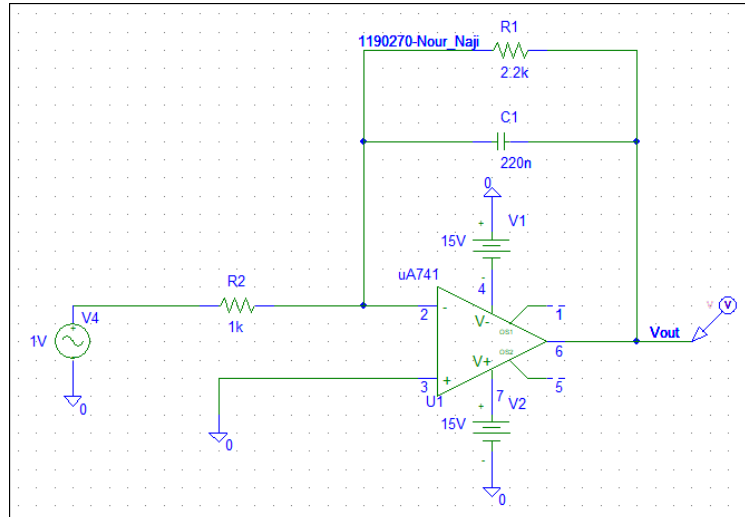


Figure 1. 10

- magnitude of V_o in decibels and phase of V_o

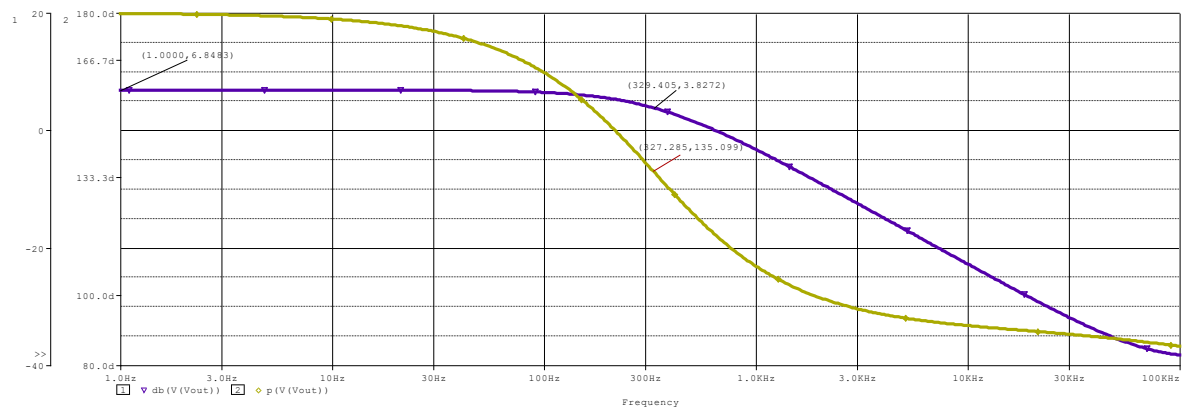


Figure 1. 11