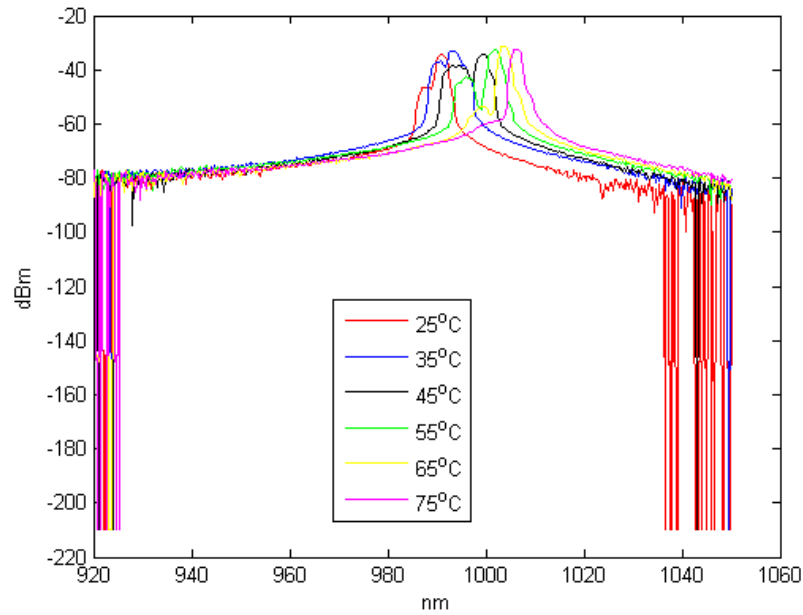
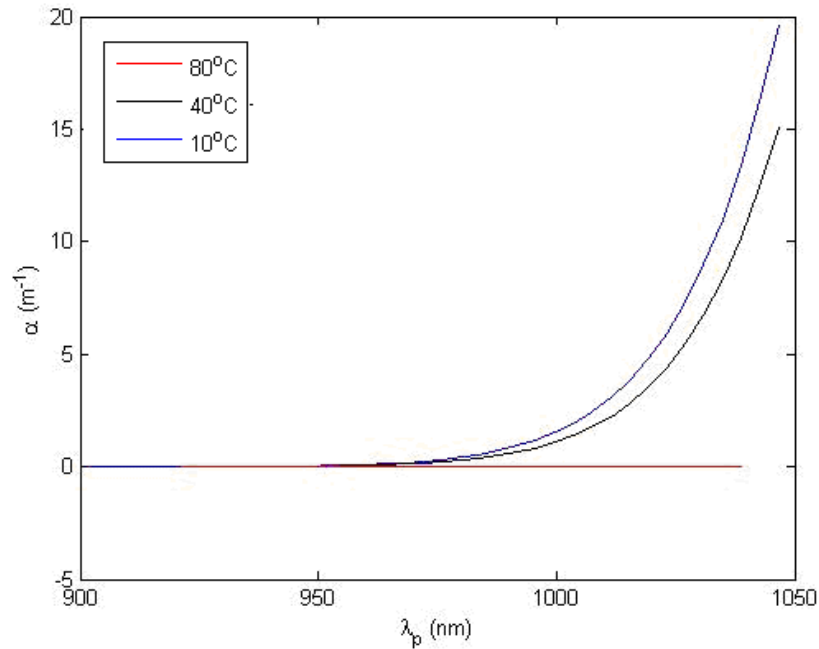


The spectrum of the lasers from the front facet is shown below. As temperature increases, the emission spectrum shifts right in the wavelength plot. The lasers were operated well above threshold (130mA), hence, the stimulated emission peak is dominant, and the gain maximum can not be identified. Probably a sub threshold spectrum analysis will help in this issue.



And the loss of the BRW mode is given as below:



The loss here is very low (below 2dB/cm) in the whole wavelength range given. Hence, the TBR reflectivity does not seem to play an important role in choosing the emission wavelength. As a matter of fact, the fabry perot modes will be responsible for the emission wavelength; and as expected, as the temperature increases, the index also increases, leading to an optically “longer” cavity, and hence, a red shift in the emission wavelength. I suppose due to the red shift of the gain spectrum with temperature in the same time, the red shift in the emission peak does not have a significant effect on the injection efficiency.

The injection efficiency and threshold current can be calculated from the LIV curves:

