

Introduction to Lasers

ECE 520.482, 2011

Home problems for the course

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Problem 2a.

2a.1. Compare gain coefficients, γ , for typical *Ruby* and *ND:YAG* laser crystals (e. g. for the parameters discussed in your notes) and discuss the major reason for that.

2a.2. Compare gain coefficients, γ , for typical *He – Ne* laser mixture and conditions at infrared laser line at $\lambda = 3.39 \mu\text{m}$ and red laser line at $\lambda = 0.6328 \mu\text{m}$ using available sources.

2a.3. A picture at the bottom of p.3 in Lecture 6 depicts essentially a dye laser *amplifier*. Suggest one (or more) mirror/resonator configurations for a laser oscillator, and elaborate the difference between them and amplifier.