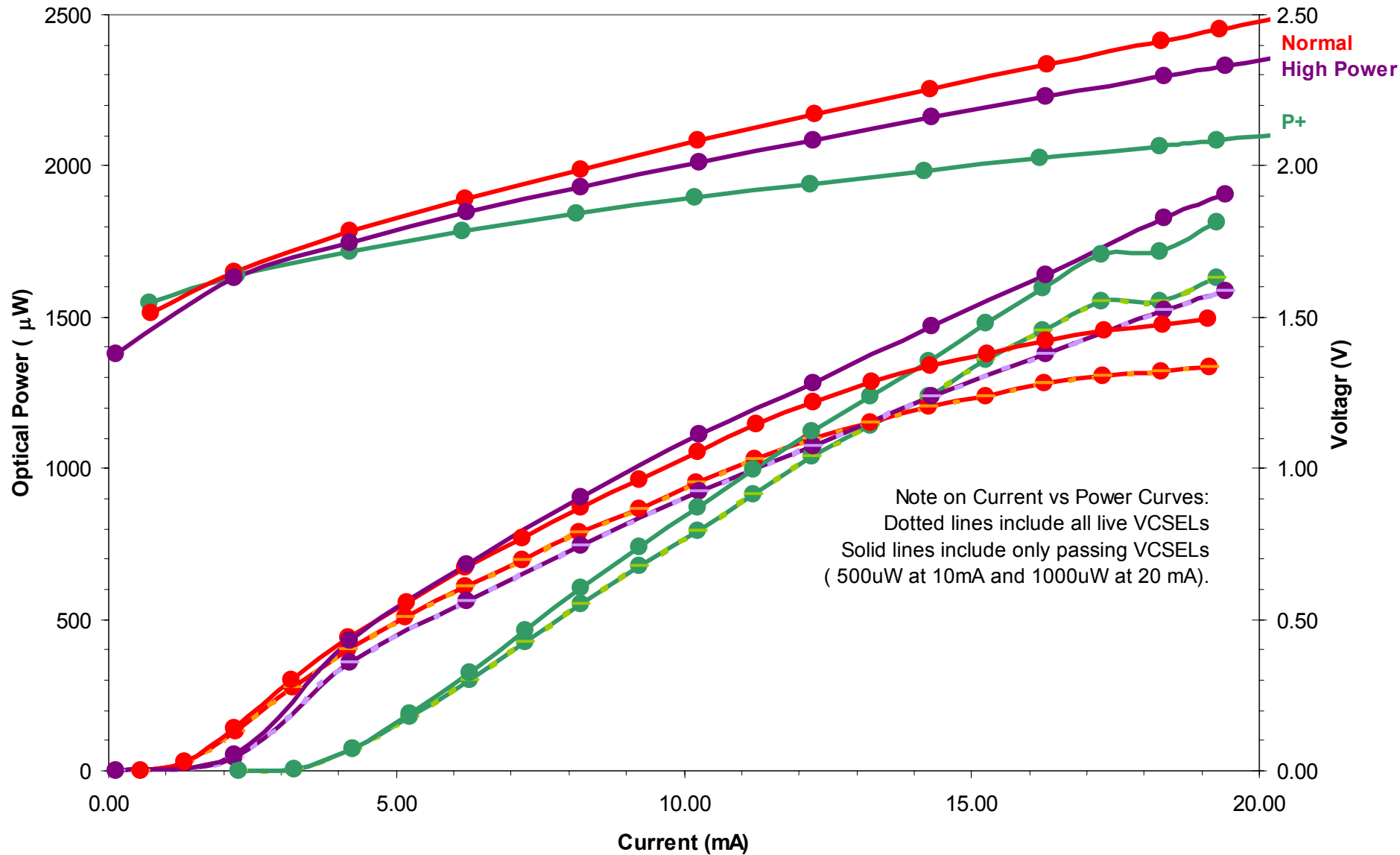


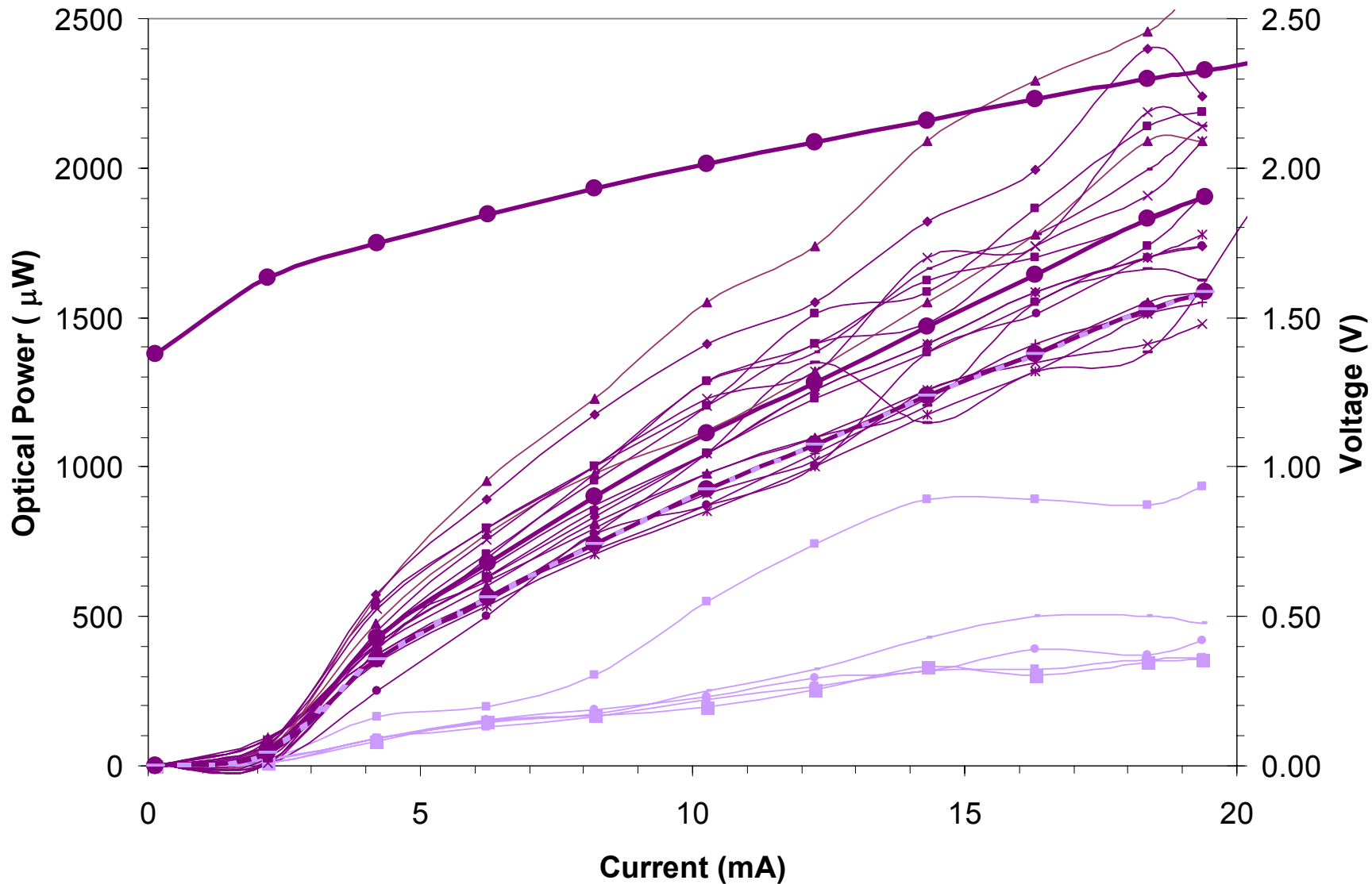
P+ and Normal and High-Power Oxide VCSELs

Current vs. Voltage and Optical Power



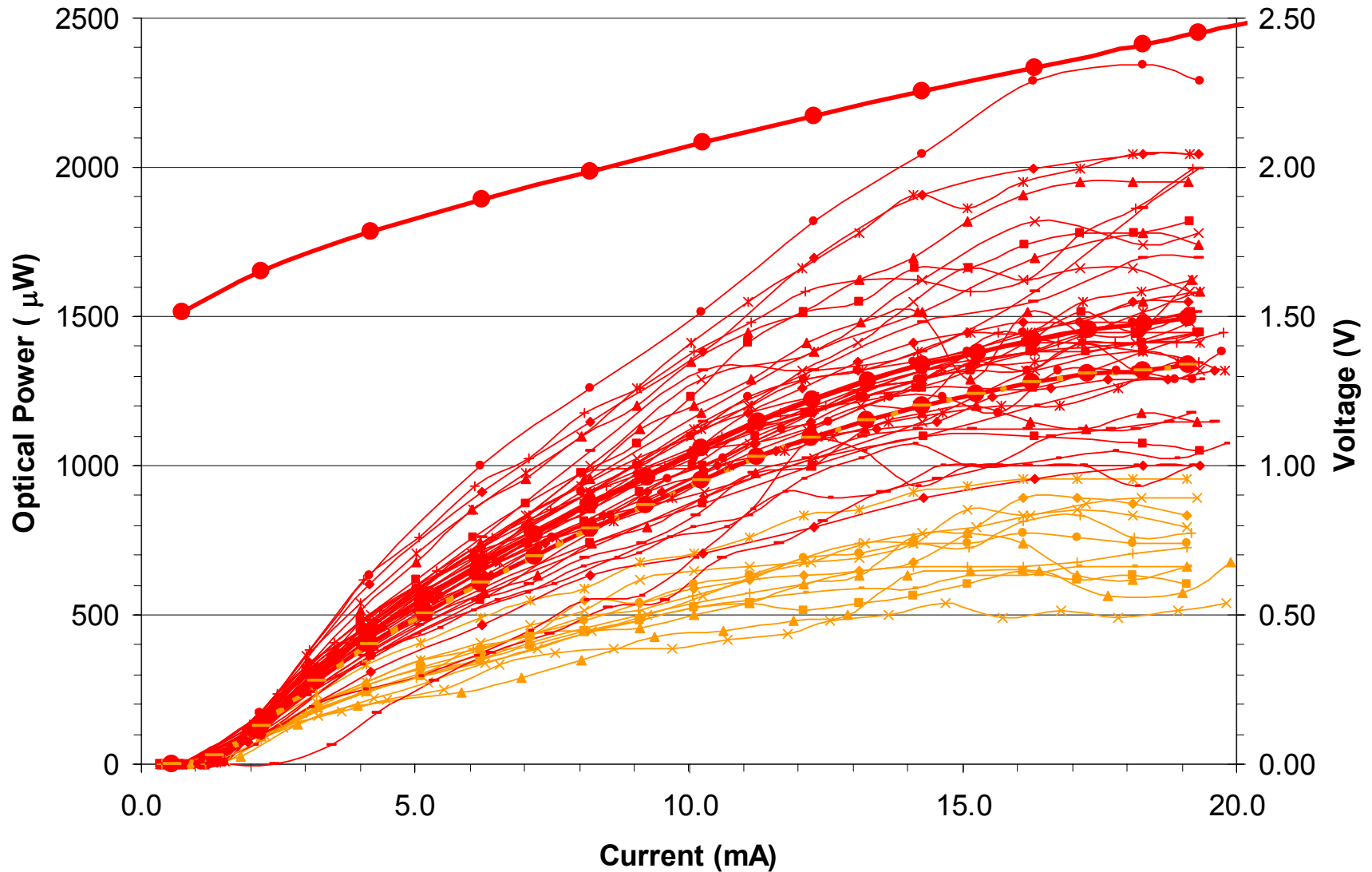
High power Oxide VCSELs

Current vs. Voltage and Optical Power



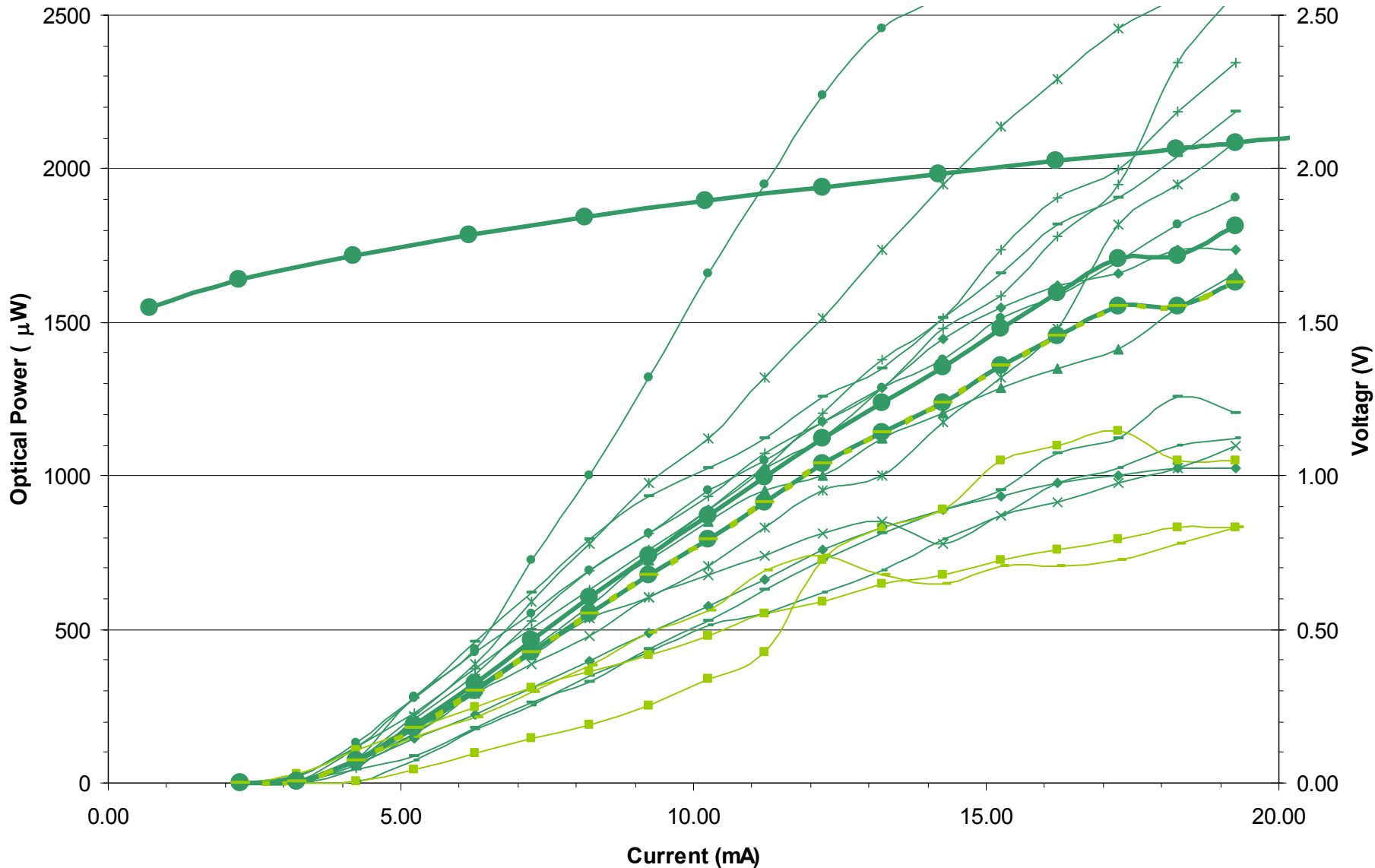
Normal Oxide VCSELs

Current vs. Voltage and Optical Power

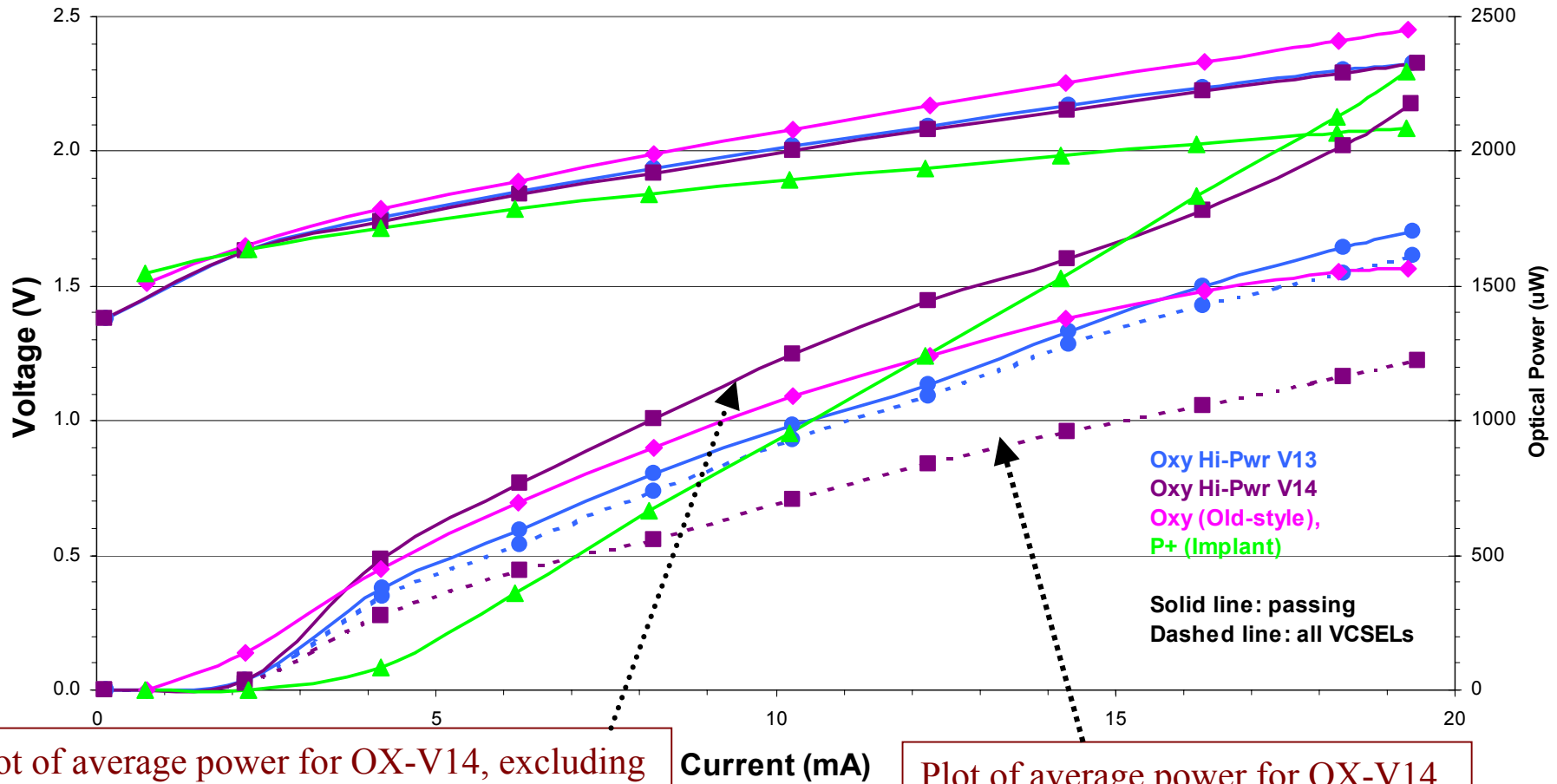


P+ VCSELs (Implant)

Current vs. Voltage and Optical Power



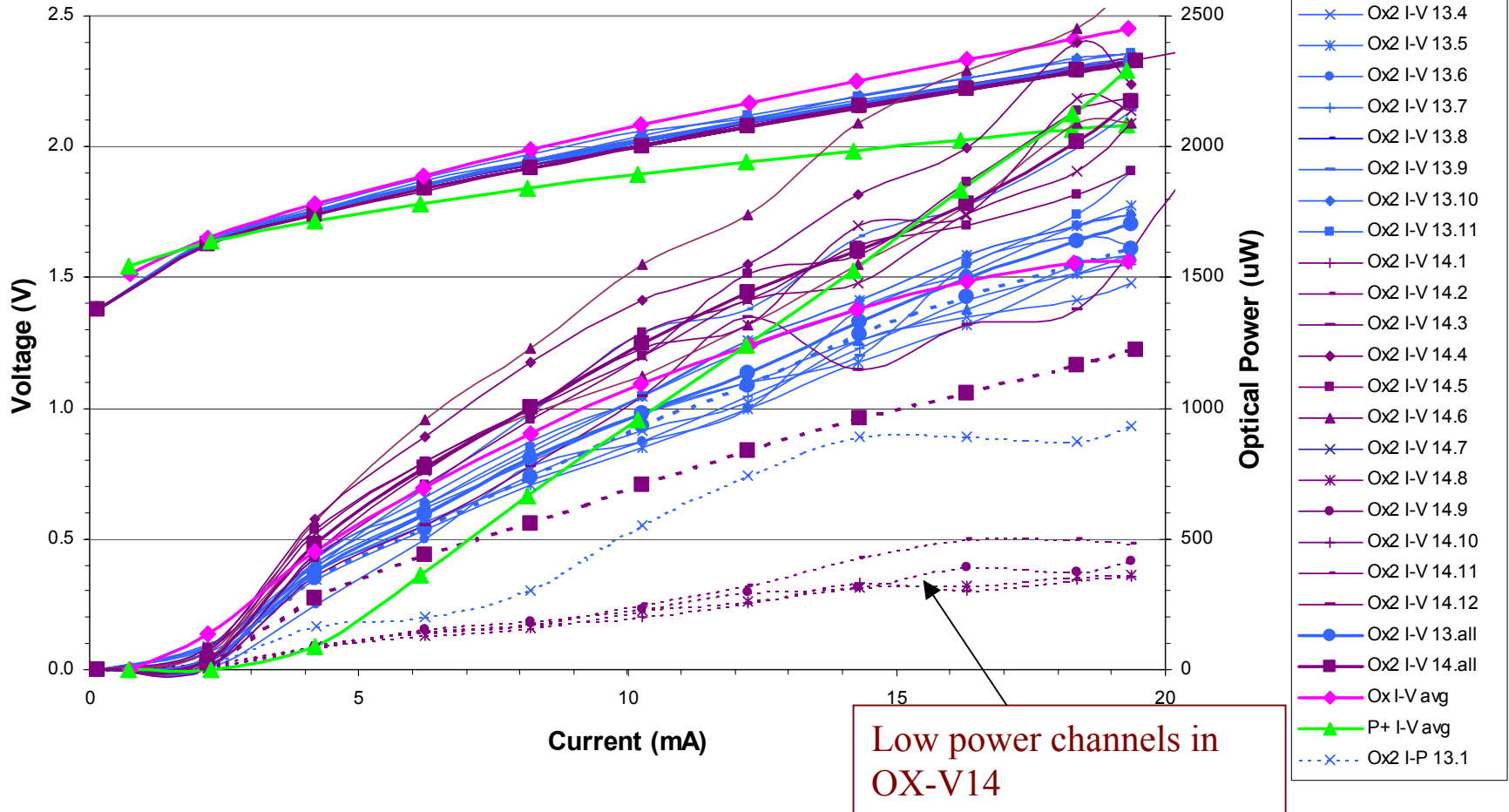
Current vs Voltage and Power for P+ and Oxide



- Some channels in one of the two new Oxide VCSELS have very low optical power which results in low average power for that VCSEL
- New style Oxide VCSELS (“higher power”) have About $150mV$ lower forward voltage at $I_{set} = 19mA$

Single Channel Plots and Averages, Current vs Voltage and Power for P+ and Oxide

Current vs. Voltage and Optical Power



- Four of the VCSEL channels in one of the new oxide packs stand out for having low power