Hi Professor

This week I mainly worked on testing the Power detector and improving the laser adjustment program.

From last time experiment, I found that the formic acid laser cavity length adjustment is very sensitive to the position ,the move step should be nearly 1um to get continuous power profile along the move distance .manual adjust is very hard to find the best position . At that time I didn’t connect the power meter to the computer ,so everything is depend on eyes on the monitor and at same time manually move the cavity length , adjustment process is awkward and inefficient .So I improve auto scanning program to combine with the power monitor system.

As for power monitor system for Formic acid laser ,I am going to use the QS5-IL sensor (0.1um-1000um) with chopper to detect the formic laser output power ,since this power detector has high time resolution ,while the absolutely power detector like SCIENTECH (both old one and new one) has about second time lag ,this will cause high time consuming for cavity length adjustment. After combining the QS5-IL sensor data analysis program with auto-scanning program, I believe we could caught the real power output profile with cavity length ,and get best position more smoothly and efficiently ,we will see .

Best regard

Xinhang Xu

Hi Professor,

This week, I mainly worked on testing the power detector and improving the laser adjustment program. From the last experiment, I found that the formic acid laser cavity length adjustment is very sensitive to position; the movement step needs to be nearly 1 µm to obtain a continuous power profile along the movement distance. Manually adjusting it is very challenging to find the optimal position. At that time, I didn’t connect the power meter to the computer, so everything depended on keeping eyes on monitoring and at the same time manually adjusting the cavity length, making the adjustment process awkward and inefficient. Therefore, I improved the auto-scanning program to integrate it with the power monitoring system.

Regarding the power monitoring system for the formic acid laser, I plan to use the QS5-IL sensor (0.1 µm - 1000 µm) with a chopper to detect the laser output power. This power detector has a high time resolution, while absolute power detectors like the SCIENTECH (both the old and new models) have about a one-second time delay, making cavity length adjustments time-consuming. By combining the QS5-IL sensor data analysis program with the auto-scanning program, I believe we can capture the real power output profile relative to the cavity length and find the optimal position more smoothly and efficiently. Let’s see how it goes.

Best regards,  
Xinhang