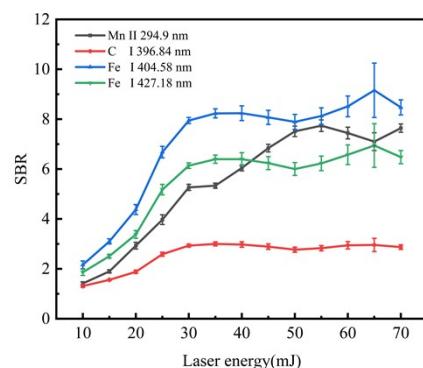
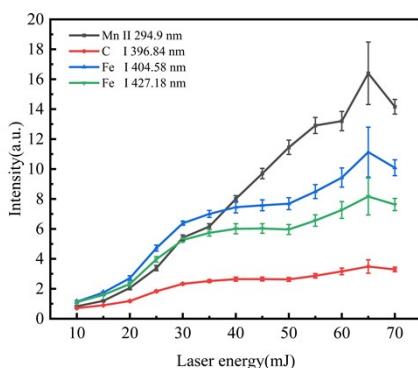
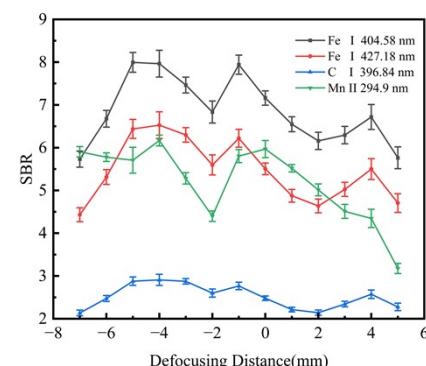
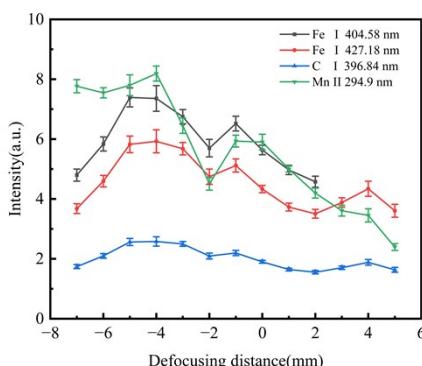
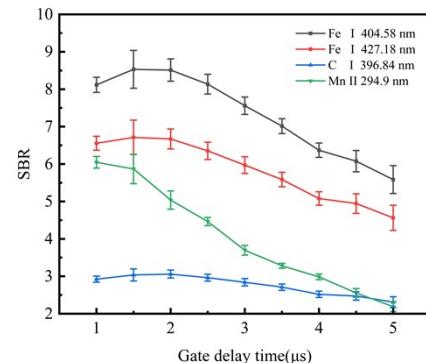
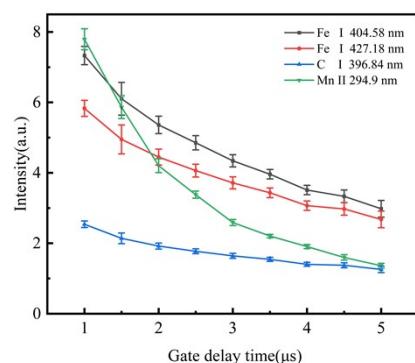


1. The following optimization curves illustrate the relationships between delay time, defocus distance, laser energy, and integration time with intensity and signal-to-background ratio (SBR). So we selected the following parameters for our experiments: 1 μ s for the gate delay time, -4 mm for the defocus distance, 40 mJ for the laser energy, and 20 μ s for the integration time.



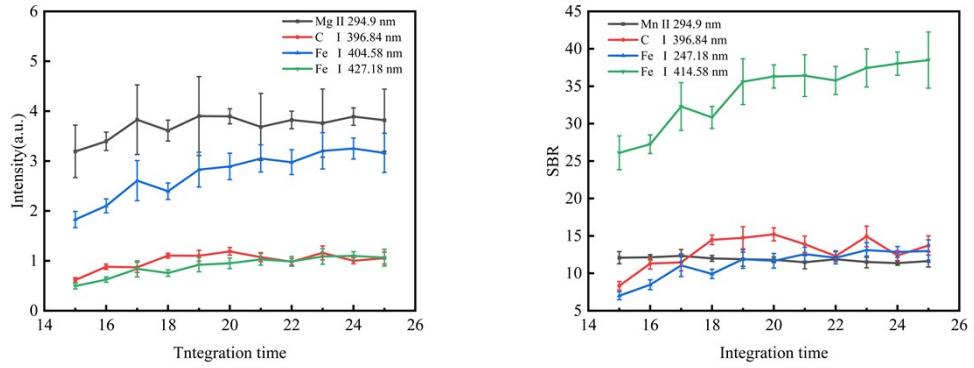


Fig.S1 Optimization curves depicting the relationships between gate delay time, defocus distance, laser energy, and integration time with intensity and SBR.

2. Monte Carlo resampling validation of model robustness

Table S2 Monte Carlo resampling results.