

## Advances in 193 nm Laser Sampling

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Pulsed excimer lasers are the most powerful 193 nm laser tools on the market. High pulse energies of some 10 to several 100mJ are available already from compact, stand-alone excimer lasers which are easily integrated into laser ablation systems for LA-ICP-MS solid sample analysis. This is because their 6.4 eV photons are generated directly without the need for frequency conversion. The high pulse energy is transformed into high fluence levels favourable in the case of optically transparent specimens or when analysing a variety of geological samples. Today, homogenized 193 nm laser optical systems for LA-ICP-MS analysis provide nanosecond pulsed output for ablation with better than 1 % rms shot-to-shot stability and on-sample fluence levels as high as 45 J/cm<sup>2</sup>. Recent advances in 193 nm solid sampling instrumentation using UV excimer lasers will be discussed. Driving accuracy and precision achieved in analysing soils and sediments, gemstones, quartz samples, calcite, fluorite, fluid inclusions and isotope ratios excimer lasers at 193 nm ensure optimum ablation quality and make the most of the capabilities of the attached ICP-MS instrument.