



## Presse Release Nobel Prize Mourou

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### Nobel prize for pioneers in ultrashort pulsed laser technology

#### Prizewinning laser technology deployed in TRUMPF lasers

*Ditzingen, October 5, 2018* – On October 2, the Nobel prize for physics was awarded to Gérard Mourou and Donna Strickland in Stockholm for their work on a method for generating very intense, ultrashort laser impulses. CPA (chirped pulse amplification) technology, which is already in widespread use, makes it possible to gently process a diverse range of materials using ultrashort, extremely powerful laser impulses. By deploying ultrashort pulsed (USP) technology in its laser systems for processing very fine or sensitive materials, TRUMPF has demonstrated that the process is groundbreaking from an industrial standpoint as well.

USP lasers prevent the material from heating up during processing, allowing the quality of existing industrial-scale applications to be enhanced. In addition, USP lasers make possible entirely new industrial machining processes, such as the efficient, high-precision cutting of glass. In this process, bursts of ultrashort laser light in the femtosecond range force the transparent glass to absorb several photons at once. Termed multi-photon absorption, this method considerably improves absorption of the incident laser light. The glass absorbs the energy of the laser in trillionths of a second, the moderate energy making only localized changes to the processed material. TRUMPF developed the TOP Cleave process, a method that harnesses these precisely measured laser impulses to make exact cuts in glass materials.

The USP lasers of TRUMPF's TruMicro 2000 and TruMicro 5000 Femto Edition series operate on the principle developed by Mourou and Strickland. In recent years, TRUMPF has marketed a four-digit number of USP laser systems internationally. The high-tech company's USP lasers are deployed mainly in microprocessing applications, in the manufacture of electronic components, and in glass welding.

More than anyone else, Gérard Mourou is synonymous with the concept of extreme light. He was the driving force behind the establishment of high-performance laser centers around the world, he recently launched ELI, a major European project focusing on extreme light infrastructure, and he has built up an international community of scientists in this field. Mourou has received numerous

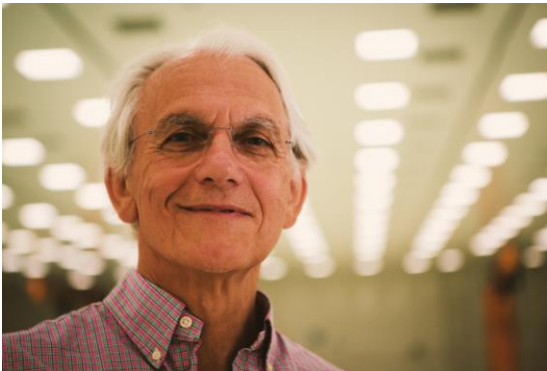
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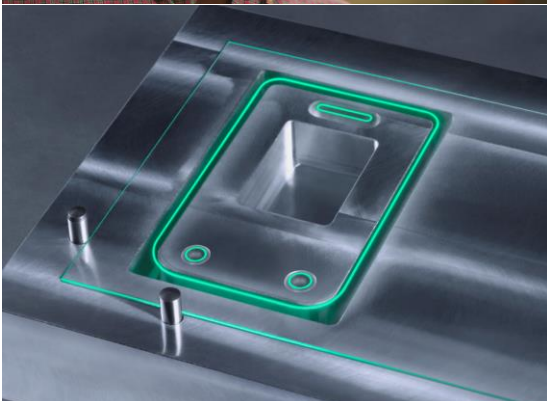
prizes for his work, including the renowned Berthold Leibinger Research Award for applied laser technology in 2016. TRUMPF sincerely congratulates the Nobel prizewinners for physics.



Nobel prizewinner Gérard Mourou  
(source: Berthold-Leibinger-  
Stiftung)



(Source: Berthold-Leibinger-  
Stiftung)



A TRUMPF ultrashort pulsed laser  
in industrial use, processing  
smartphone displays.



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The CPA technology, which is used in many laser systems by TRUMPF, makes it possible to gently process a diverse range of materials using ultrashort, extremely powerful laser impulses

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### About TRUMPF

The high-technology company TRUMPF offers production solutions in the machine tool and laser sectors. It is driving digital connectivity in manufacturing industry through consulting, platform and software offers. TRUMPF is the world technological and market leader for machine tools used in flexible sheet metal processing, and also for industrial lasers.

In 2017/18 the company – which has about 13,500 employees – achieved sales of 3.6 billion euros (preliminary figures). With over 70 subsidiaries, it is represented in nearly all the countries of Europe, North and South America, and Asia. It has production facilities in Germany, France, Great Britain, Italy, Austria, Switzerland, Poland, the Czech Republic, the USA, Mexico, China and Japan.

For more information about TRUMPF go to [www.trumpf.com](http://www.trumpf.com)

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