



Special Issue Reprint

Laser-Based Nano Fabrication and Nano Lithography

Edited By:

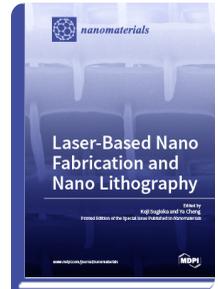
Koji Sugioka

Ya Cheng

mdpi.com/books/pdfview/book/1049

ISBN 978-3-03897-410-9 (Pbk)

ISBN 978-3-03897-411-6 (PDF)



The improvement of fabrication resolutions is an eternal challenge for miniaturizing and enhancing the integration degrees of devices. Laser processing is one of the most widely used techniques in manufacturing due to its high flexibility, high speed, and environmental friendliness. The fabrication resolution of laser processing is, however, limited by the diffraction limit. Recently, much effort has been made to overcome the diffraction limit in nano fabrication. Specifically, combinations of multiphoton absorption by ultrafast lasers and the threshold effect associated with a Gaussian beam profile provide fabrication resolutions far beyond the diffraction limit. The use of the optical near-field achieves nano ablation with feature sizes below 100 nm. Multiple pulse irradiation from the linearly polarized ultrafast laser produces periodic nanostructures with a spatial period much smaller than the wavelength. Unlimited diffraction resolutions can also be achieved with shaped laser beams. In the meanwhile, lasers are also widely used for the synthesis of nano materials including fullerenes and nano particles. In view of the rapid advancement of this field in recent years, this Special Issue aims to introduce the state-of-the-art in nano fabrication and nano lithography, based on laser technologies, by leading groups in the field.



Order Your Print Copy

Print copies (170x244mm, Pbk) can be ordered at:

www.mdpi.com/books/pdfview/book/1049

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.



Open Access

Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.



Author Focus

Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.



High Quality & Rapid Publication

MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.



High Visibility

Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), the Verzeichnis lieferbarer Bücher (VLB).



Print on Demand and Multiple Formats

MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.