Laser Printing of Functional Materials: 3D Microfabrication, Electronics and Biomedicine
Alberto Piqué (Editor), Pere Serra (Editor)

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DESCRIPTION

The first book on this hot topic includes such major research areas as printed electronics, sensors, biomaterials and 3D cell printing.

Well-structured and with a strong focus on applications, the text is divided in three sections with the first describing the fundamentals of laser transfer. The second provides an overview of the wide variety of materials that can be used for laser transfer processing, while the final section comprehensively discusses a number of practical uses, including printing of electronic materials, printing of 3D structures as well as large-area, high-throughput applications. The book is rounded off by a look at the future for laser printed materials.

Invaluable reading for a broad audience ranging from material developers to mechanical engineers, from academic researchers to industrial developers and for those interested in the development of micro-scale additive manufacturing techniques.

ABOUT THE AUTHOR

Dr. Alberto Piqué is Head of the Materials and Systems Branch in the Materials Science Division at the Naval Research Laboratory. His research focuses on the study and applications of laser-material interactions. Dr. Piqué and his group have pioneered the use of laser-based direct-write techniques for the rapid prototyping of electronic, sensor and micro-power generation devices. Dr. Piqué holds a B.S. and M.S. in Physics from Rutgers University and a Ph.D. in Materials Science and Engineering
from the University of Maryland. He is a SPIE (2012) and APS (2014) Fellow. To date, his research has resulted in over 200 scientific publications, 14 book chapters and 22 U.S. patents.

Dr. Pere Serra is professor at the Department of Applied Physics of the University of Barcelona. He received his Ph.D. from the same university in 1997. His research has been devoted to multiple topics in the laser materials processing area, from pulsed laser deposition to laser surface treatments. In the last years he has focused his activity on laser microfabrication technologies, with a special attention to laser printing techniques for the fabrication of biomedical and printed electronic devices. He has co-authored 95 publications in international journals, has given more than 20 invited talks, and served as co-chair and committee member in numerous international conferences. He is currently co-editor of the Journal of Laser Micro/Nanoengineering.

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