

- M. TRTICA, J. LIMPOUCH, P. GAVRILOV, P. HRIBEK,  
J. STASIC, G. BRANKOVIC, AND X. CHEN **534** Surface modification of ASP 30 steel induced by femtosecond laser with  $10^{14}$  and  $10^{13} \text{ W/cm}^2$  intensity in vacuum
- D. NOBAHAR, K. HAJISHARIFI, AND H. MEHDIAN **543** Twisted modes instability of electron–positron shell interacted with moving ion background
- M. GHORBANALILU AND Z. HEIDARI **551** Reflected and transmitted second harmonics generation by an obliquely *p*-polarized laser pulse incident on vacuum-magnetized plasma interface

# LASER AND PARTICLE BEAMS

Pulse Power, High Energy Densities, Hot Dense Matter, and Warm Dense Matter

Volume 35

September 2017

Number 3

## CONTENTS

M. KAUR, P. C. AGARWAL, AND S. KAUR	<b>379</b>	Laser second-harmonic generation from an overdense plasma slab
A.K. SINGH	<b>386</b>	Electron acceleration by whistler pulse in high-density plasma
W. ZHANG, R. SHEN, Y. YE, L. WU, P. ZHU, AND Y. HU	<b>391</b>	Distribution and formation of particles produced by laser ablation of cyclotetramethylene tetranitramine
A.S. BOLDAREV, A.Y. FAENOV, Y. FUKUDA, S. JINNO, T.A. PIKUZ, M. KANDO, K. KONDO, AND R. KODAMA	<b>397</b>	Numerical modelling of the cluster targets for their optimization in femtosecond-laser-cluster-driven experiments
J. ZHANG, H.W. ZHONG, X. YU, J. SHEN, G.Y. LIANG, X.J. CUI, X.F. ZHANG, G.L. ZHANG, S. YAN, AND X.Y. LE	<b>409</b>	Simulation analysis of zinc ablation process and mass by intense pulsed ion beam irradiation
A. SUSLOVA AND A. HASSANEIN	<b>415</b>	Simulation of femtosecond laser absorption by metallic targets and their thermal evolution
S. KUMAR, P.K. GUPTA, R.K. SINGH, S. SHARMA, R. UMA, AND R.P. SHARMA	<b>429</b>	Pulse-compression and self-focusing of Gaussian laser pulses in plasma having relativistic-ponderomotive nonlinearity
H. SADEGHI, M. HABIBI, AND M. GHASEMI	<b>437</b>	Ion acceleration mechanism in plasma focus devices
R. RATHORE, V. ARORA, H. SINGHAL, T. MANDAL, J.A. CHAKERA, AND P.A. NAIK	<b>442</b>	Experimental and numerical study of ultra-short laser-produced collimated Cu $K_{\alpha}$ X-ray source
A.Y. FAENOV, T.A. PIKUZ, G.A. VERGUNOVA, S.A. PIKUZ, I.Y. SKOBELEV, A. ANDREEV, A. ZHIDKOV, AND R. KODAMA	<b>450</b>	Ultra-bright keV X-ray source generated by relativistic femtosecond laser pulse interaction with thin foils and its possible application for HEDS investigations
O. BUDRIGĂ AND E. D'HUMIÈRES	<b>458</b>	Modeling the ultra-high intensity laser pulse – cone target interaction for ion acceleration at CETAL facility
DEEP KUMAR KURI, NILAKSHI DAS, AND KARTIK PATEL	<b>467</b>	Formation of periodic magnetic field structures in overdense plasmas
Y. YANG, J. JIAO, C. TIAN, Y. WU, K. DONG, W. ZHOU, Y. GU, AND Z. ZHAO	<b>476</b>	Near-microcoulomb multi-MeV electrons generation in laser-driven self-formed plasma channel
J.C. ZHAO, L.H. CAO, J.H. ZHENG, Z.Q. ZHAO, Z.J. LIU, C.Y. ZHENG, H. ZHANG, Y.Q. GU, AND J. LIU	<b>483</b>	The model of the influence of the electron refluxing on the electron transport and $K_{\alpha}$ emission
K. ZEHRA, S. BASHIR, S.A. HASSAN, Q.S. AHMED, M. AKRAM, AND A. HAYAT	<b>492</b>	The effect of nature and pressure of ambient environment on laser-induced breakdown spectroscopy and ablation mechanisms of Si
C. KAUR, S. CHAURASIA, A.A. PISAL, A.K. ROSSALL, D.S. MUNDA, A. VENKATESWARA RAO, AND M.N. DEO	<b>505</b>	X-ray and ion emission studies from subnanosecond laser-irradiated SiO <sub>2</sub> aerogel foam targets
A. BRET, A. PE'ER, L. SIRONI, M.E. DIECKMANN, AND R. NARAYAN	<b>513</b>	Departure from MHD prescriptions in shock formation over a guiding magnetic field
Y. ZHANG, J.-L. JIAO, B. ZHANG, Z.-M. ZHANG, AND Y.-Q. GU	<b>520</b>	GV/cm scale laser-magnetic resonant acceleration in vacuum
K.L. MANN, V. SAJAL, AND N.K. SHARMA	<b>528</b>	Excitation of terahertz radiation generation by obliquely incident beating lasers on a hot magnetized plasma with step density profile

### Cambridge Core

For further information about this journal please go to the journal website at:  
[cambridge.org/lpb](https://cambridge.org/lpb)

CAMBRIDGE  
UNIVERSITY PRESS