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Area of Interest

Plasma Physics, Laser-Plasma Interaction, Particle Acceleration

List of Publications

INTERNATIONAL
Amity University

1. A. Panwar, C. M. Ryu, and **A. Kumar**, Effect of plasma channel non-uniformity on resonant third harmonic generation', **Accepted for publication**, *Laser and Particle Beams, (2013).* [IF: 1.62]

2. **A. Kumar**, Ponderomotive Self Focusing of Surface Plasma Wave, *Plasmonics*. DOI10.1007/s11468-013-9521-2(2013) http://link.springer.com/article/10.1007%2Fs11468-013-9521-2# [IF: 2.989]

3. **A. Kumar**, Terahertz generation by nonlinear mixing of laser and its second harmonic in a rippled density plasma, *Applied Physics B: Laser and Optics*, **110** 117-121 (2012). http://link.springer.com/article/10.1007%2Fs00340-012-5258-4# [IF: 2.189]

4. A. Panwar, **A. Kumar** and C. M. Ryu, Stimulated Raman forward scattering of a laser in a pre-formed plasma channel, *Laser and Particle Beams,* (2011*).* doi:10.1017/S0263034612000535 http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8699026 [IF: 1.62]

5. **A. Kumar,** Effect of nonlinear absorption on self-focusing of short laser pulse in a plasma, *Phys. Plasmas* **19**, 063101 (2012). http://pop.aip.org/resource/1/phpaen/v19/i6/p063101_s1 [IF: 2.147]

6. **A. Kumar** and A. L. Verma, Nonlinear absorption of intense short pulse laser over a metal surface embedded with nanoparticles, *Laser and Particle Beams* **29**, 333, (2011). http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8372536# [IF: 1.62]

7. **A. Kumar**, D. Dahiya, and A. K. Sharma, Laser prepulse induced plasma channel formation in air and relativistic self focusing of an intense short pulse, *Physics of Plasmas* **18**, 023102, (2011). http://pop.aip.org/resource/1/phpaen/v18/i2/p023102_s1?isAuthorized=no [IF: 2.147]

IIT Delhi

[1] **A. Kumar** and V. K. Tripathi, Parametric coupling of a lower hybrid pump with neutral beam driven ion cyclotron instability in a tokamak, *Physics of Plasmas* **15**, 062509, (2008). http://pop.aip.org/phpaen/v15/i6/p062509_s1?isAuthorized=no#tabs_1_113_1262115575_tab3

[2] **A. Kumar** and V. K. Tripathi, Parametric excitation of electron Bernstein waves by a radio wave in the ionosphere and its possible consequence for airglow, *J. Phys. D: Appl. Phys.* **40** 3396-3401 (2007). http://iopscience.iop.org/0022-3727/40/11/020/

[3] A. K. Sharma and **A. Kumar,** Nonlinear gain of a millimeter wave antenna array mounted on a re-entry vehicle, *J. Phys. D: Appl. Phys.* **40,** 2033-2036, (2007). http://iopscience.iop.org/0022-3727/40/7/027

[4] **A. Kumar**, R. Uma and V. K. Tripathi, Nonlinear reflection of a high-frequency radio wave by the ionospheric grating created by another wave, *Radio Sci.* **41**(4), RS4014, (2006). http://www.agu.org/pubs/crossref/2006/2005RS003422.shtml

Patents
Research Projects

S.No.	Title	Investigators	Agency	Period	Grant/ Amount Mobilized (Rs. Lakhs)
1	High Power Laser Absorption and Penetration in Metallic Targets	Ashok Kumar (PI) A. L. Verma (Co-PI)	DRDO	2 Years (2010-12)	9.33 lacs

Kindly change my photo.(Dr. Ashok Kumar, 2164, Dept of Physics)