

Institute of Physics Publishing

**First International Workshop  
on Nonequilibrium Processes in  
Plasma Physics and Studies  
of Environment  
2006**

Journal of Physics: Conference Series Vol. 71

August 28 – September 1, 2006  
Kopaonik, Serbia

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571  
[www.proceedings.com](http://www.proceedings.com)

ISBN: 978-1-60560-272-1

Some format issues inherent in the e-media version may also appear in this print version.

Copyright (2006) by the Institute of Physics Publishing.

All rights reserved.

For permission requests, please contact the Institute of Physics Publishing at the address below.

Institute of Physics Publishing  
Dirac House, Temple Back  
Bristol BS1 6BE UK

**Tel** +44 (0)117 929 7481  
**Fax** +44 (0)117 929 4318

Institute of Physics Publishing

First International Workshop on Nonequilibrium Processes  
in Plasma Physics and Studies of Environment  
2006

## TABLE OF CONTENTS

<b>High Pressure Laser-generated Shocks and Application to EOS of Carbon</b> .....	1
<i>D Batani, R Dezulian, H Stabile, M Tomasini, G Lucchini, F Canova, R Redaelli, M Koenig, A Benuzzi, H Nishimura, Y Ochi, J Ullschmied, J Skala, B Kralikova, M Pfeifer, T Mocek, A Präg, T Hall, P Milani, E Barborini, P Piseri</i>	
<b>Anomalous Diffusion at Edge and Core of a Magnetized Cold Plasma</b> .....	13
<i>Mario J Pinheiro</i>	
<b>Non-neutral Plasma Confinement in Toroidal Geometry</b> .....	25
<i>J P Marler, M R Stoneking</i>	
<b>The <math>v = 0 \rightarrow 1</math> Vibrational Cross-section for e-H<sub>2</sub> Scattering: an Unresolved Problem with Wide Implications</b> .....	32
<i>R D White, R E Robson, Michael A Morrison, B Li, K F Ness</i>	
<b>Negative Electron Conductivity in Gases and Semiconductors</b> .....	44
<i>N A Dyatko</i>	
<b>Electron and Ion Swarm Data of Fluorinated Gases Used in Plasma Processing</b> .....	58
<i>J de Urquijo</i>	
<b>Modelling of Breakdown Behavior by PIC/MCC Code with Improved Secondary Emission Models</b> .....	74
<i>M Radmilović-Radjenović, Z Lj Petrović, B Radjenović</i>	
<b>Effects of Fast Neutral Particles in Low-pressure Gas Discharges</b> .....	93
<i>Z Donkó, P Hartmann, K Kutasi</i>	
<b>On Hydrogen Negative Ion Formation and Concentration Measurements in Hollow Cathode and Positive Column Glow Discharge</b> .....	108
<i>V Gencheva, R Djulgerova, V Mihailov, T Dohnalik, Z Lju Petrovic</i>	
<b>Nitrogen Dissociation in Low-pressure Microwave Plasmas</b> .....	123
<i>Elena Tatarova, Vasco Guerra, Júlio Henriques, Carlos M Ferreira</i>	
<b>Non-equilibrium Calculations of Atmospheric Processes Initiated by Electron Impact</b> .....	134
<i>L Campbell, M J Brunger</i>	
<b>Diagnostics on an Atmospheric Pressure Plasma Jet</b> .....	144
<i>K Niemi, St Reuter, L Schaper, N Knake, V Schulz-von der Gathen, T Gans</i>	
<b>Plasmas in Saline Solution</b> .....	153
<i>W G Graham, K R Stalder</i>	
<b>Low Energy Ion Implantation Using Non-equilibrium Glow Discharge</b> .....	157
<i>Svetlana Radovanov, Ludovic Godet</i>	
<b>Non-equilibrium Processes and Dust Formation in Low Pressure Reactive Plasmas</b> .....	183
<i>I Stefanović, E Kovačević, J Berndt, J Winter</i>	

**An Assessment of Air Quality in Belgrade Urban Area: PM<sub>10</sub>, PM<sub>2.5</sub> and Trace Metals** ..... 193  
*M Tasic, S Rajsic, V Novakovic, Z Mijic*

**Environmental Impact of Plasma Application to Textiles** ..... 206  
*M Radetic, P Jovancic, N Puac, Z Lj Petrovic*

**Author Index**