



Fainstein
Lima
Miraglia
Montenegro
Rivarola

**Photonic, Electronic
and Atomic Collisions**

editors

Pablo D Fainstein
Marco Aurelio P Lima
Jorge E Miraglia
Eduardo C Montenegro
Roberto D Rivarola

**Photonic, Electronic
and Atomic Collisions**

Proceedings of the XXIV International Conference



Photonic, Electronic and Atomic Collisions

Proceedings of the XXIV International Conference

Rosario, Argentina 20 – 26 July 2005

editors

Pablo D Fainstein

(Centro Atómico Bariloche, Argentina),

Marco Aurelio P Lima

(Universidade Estadual de Campinas, Brasil),

Jorge E Miraglia

(Instituto de Astronomía y Física del Espacio, Argentina),

Eduardo C Montenegro

(Universidade Federal do Rio de Janeiro, Brasil) &

Roberto D Rivarola

(Universidad Nacional de Rosario, Argentina)

 **World Scientific**

NEW JERSEY • LONDON • SINGAPORE • BEIJING • SHANGHAI • HONG KONG • TAIPEI • CHENNAI

Published by

World Scientific Publishing Co. Pte. Ltd.

5 Toh Tuck Link, Singapore 596224

USA office: 27 Warren Street, Suite 401-402, Hackensack, NJ 07601

UK office: 57 Shelton Street, Covent Garden, London WC2H 9HE

British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library.

PHOTONIC, ELECTRONIC AND ATOMIC COLLISIONS
Proceedings of the XXIV International Conference

Copyright © 2006 by World Scientific Publishing Co. Pte. Ltd.

All rights reserved. This book, or parts thereof, may not be reproduced in any form or by any means, electronic or mechanical, including photocopying, recording or any information storage and retrieval system now known or to be invented, without written permission from the Publisher.

For photocopying of material in this volume, please pay a copying fee through the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, USA. In this case permission to photocopy is not required from the publisher.

ISBN 981-270-412-4

Printed in Singapore by B & JO Enterprise

State-Selective X-Ray Study of the Radiative Recombination of U^{92+} Ions with Cooling Electrons	289
<i>M. Pajek, Th. Stöhlker, D. Banaś, H. F. Beyer, S. Böhm, F. Bosch, C. Brandau, M. Czarnota, S. Chatterjee, J.-Cl. Dousse, A. Gumberidze, S. Hagmann, C. Kozhuharov, D. Liesen, A. Müller, R. Reuschl, E. W. Schmidt, D. Sierpowski, U. Spillmann, J. Szlachetko, S. Tashenov, S. Trotsenko, P. Verma, M. Walek, A. Warczak and A. Wilk</i>	
Electron Collisions with Trapped, Metastable Helium	293
<i>L. J. Uhlmann, R. G. Dall, K. G. H. Baldwin and S. J. Buckman</i>	
Non-Dipole Effects in Electron and Photon Impact Ionization	297
<i>N. L. S. Martin</i>	
Electron Driven Processes in Atmospheric Behaviour	305
<i>L. Campbell, M. J. Brunger and P. J. O. Teubner</i>	
Calculation of Excitation and Ionization for Electron-Molecule Collisions at Intermediate Energies	313
<i>J. D. Gorfinkiel</i>	
Absolute Total Cross Sections for Electron- CH_4 Scattering at Intermediate Energies	320
<i>M. C. A. Lopes, M. P. Gomes, H. Couto, W. de Souza Melo and L. L. de Lima</i>	
Electron- CO_2 Scattering in a Cluster Environment	324
<i>I. I. Fabrikant</i>	
Isomer Effect in Electron Collisions with Small Hydrocarbons	328
<i>M. H. F. Bettega, A. R. Lopes, S. D'A. Sanchez, M. T. do N. Varella, M. A. P. Lima and L. G. Ferreira</i>	
Low Energy Electron Interactions with Bio-Molecules	336
<i>B. P. Marinković, D. M. Filipović, V. Pejčev, D. Šević, A. R. Milosavljević, D. Pavlović, S. Milisavljević, P. Kolarž and M. Pardovska</i>	

COLLISIONS INVOLVING ELECTRONS

Photonic, Electronic and Atomic Collisions

Proceedings of the XXIV International Conference



This book contains a series of scientific contributions corresponding to the invited talks to the XXIV International Conference on Photonic, Electronic and Atomic Collisions. A wide range of subjects comprising a balanced mix of topics is covered. It includes the collisions of heavy particles and electrons with atoms, molecules and clusters, the coherent control of reaction dynamics using lasers and electromagnetic fields with molecules, clusters and liquids, the collisions of electrons and heavy particles with surfaces, the transport of particles through solids, the interaction of multicharged ions with metallic and insulating nanocapillaries, the recent experimental progress in the synthesis of antihydrogen, the interaction of solar winds with cometary atmospheres, the physical interpretation of reactions in biological systems, and cold-atom/molecules collisions, among other themes.

