

INTERNATIONAL CONFERENCE ON MANY PARTICLE SPECTROSCOPY OF ATOMS, MOLECULES, CLUSTERS AND SURFACES

BUDAPEST, HUNGARY 21-24 AUGUST 2018

PROGRAMME AND BOOK OF ABSTRACTS

International Conference on Many Particle Spectroscopy of Atoms, Molecules, Clusters and Surfaces

Budapest, Hungary

21-24 August 2018



Programme and **Book of Abstracts**

Local Organizing Committee

Károly Tőkési (Chair) Arnold Farkas Henrik Haspel Zoltán Kónya Béla Paripás Gábor Pszota

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Organized by

EKHO' 94 Ltd., Debrecen

Venue

Danubius Hotel Flamenco, Budapest, 3-7 Tas vezér str., 1113

Conference Issue

Papers submitted to the conference will be published following the conference in a Topical Issue (Many Particle Spectroscopy of Atoms, Molecules, Clusters and Surfaces) of EPJD: Atomic, Molecular, Optical and Plasma Physics. Guest Editors: K. Tőkési, B. Paripás, G. Pszota, and A V Solov'yov

Programme and Book of Abstracts

This book contains the programme of the International Conference on Many Particle Spectroscopy of Atoms, Molecules, Clusters and Surfaces held from 21-24 August 2018 in Budapest. Hungary and

the camera-ready copies of the abstracts as sent by the authors. In few cases only minor corrections were made. Editors: K. Tőkési, B. Paripás, G. Pszota

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Vibrational and dissociative dynamics of resonant states in nitrobenzene

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A standard tool for probing the dynamics of nuclear motion is by time-resolved ultrafast spectroscopy. We use a different approach by forming a resonance (temporary negative ion) in an electron-molecule collision and utilizing the fact that the competition between the electron detachment and molecular dissociation is happening on a femto- to picosecond timescale.

We have measured the 2-dimensional electron impact spectroscopy [1] to understand the vibrational excitation of nitrobenzene ($C_6H_5NO_2$) via different temporary negative ion (TNI) states. The energy loss spectra in between 0-1.5 eV recorded for 0.6 eV constant residual energy is shown in Figure 1.



Figure 1. Energy loss-spectra of $C_6H_5NO_2$ recorded at 135° for constant residual energy of 0.6 eV

In electron impact vibrational excitation, the incoming electron resonantly captured by the molecule, forming a TNI state. The TNI ejects the electron and decays into ground and different vibrationally excited states. The cross-section of the scattered electrons with a fixed energy loss for different incident electron energies is shown in figure 2. We also have measured the absolute cross-section of all the fragments formed due to dissociative electron



attachment to nitro-benzene [2]. In the

presentation we will discuss the results in detail.

Figure 2. Vibrational excitation of nitrobenzene via different resonant states.

References

[1] K. Regeta, M. Allan, *Phys. Rev. Lett.* (2013) 110, 203201.

[2] A Pelc, P.Scheier, T. D. Märk , Vacuum, (2007) 81, 1180

August 22, 2018 Wednesday		August 23, 2018 Thursday		August 24, 2018 Friday	
Femto-, attosecond physics (Chair: Edwin Kukk)		Photoionization II. (Chair: Shaofeng Zhang)		Electron collisions (Chair: Alexander Dorn)	
8:40 - 9:00	Opening Norbert Kroó	9:00 - 9:30	Nicolas Sisourat	9:00 - 9:30	Jelena Maljković
9:00 - 9:30	Fernando Martin	9:30 - 9:50	Eliezer Kolodney	9:30 - 10:00	Zehra N. Ozer
9:30 - 10:00	Nora Berrah	9:50 - 10:10	Yuki Orimo	10:00 - 10:30	Matthieu Genevriez
10:00 - 10:30	Florian Trinter	10:10 - 10:30	Stepan Balybin		
10:30 - 11:00	Coffee Break	10:30 - 11:00	Coffee Break	10:30 - 11:00	Coffee Break
Photoionization I. (Chair: Emma Sokell)		Interactions with molecules I. (Chair: Lorenzo Avaldi)		Coll. with molecular syst. (Chair: Stephan Fritzsche)	
11:00 - 11:30	Liang-You Peng	11:00 - 11:30	Da Bo	11:00 - 11:30	Noboru Watanabe
11:30 - 11:50	Maria-Novella Piancastelli	11:30 - 11:50	Victor Despre	11:30 - 11:50	Vishant Kumar
11:50 - 12:10	Stephan Fritzsche	11:50 - 12:10	Moustafa Zmerli	11:50 - 12:10	Zoltán Jurek
12:10 - 12:30	Francis Penent	12:10 - 12:30	Raimund Feifel	12:10 - 12:30	Isabella Floss
12:30 - 14:00	Lunch	12:30 - 14:00	Lunch	12:30 - 14:00	Lunch
Laser field I. (Chair: Nora Berrah)		Interactions with molecules II. (Chair: Sebastian Otranto)		Heavy particle collisions (Chairs: Nicolas Sisourat/ Nikolay Shvetsov-Shilovski)	
14:00 - 14:30	Elena V. Gryzlova	14:00 - 14:30	Miriam Weller	14:00 - 14:30	Ilkhom Abdurakhmanov
14:30 - 15:00	Diego G. Arbó	14:30 - 15:00	Kilian Fehre	14:30 - 14:50	Richard A. Wilhelm
15:00 - 15:20	Ph. V. Demekhin	15:00 - 15:20	Moh. F. Gharaibeh	14:50 - 15:10	Luca Repetto
15:20 - 15:40	Imre Barna	15:20 - 15:40	Nikolay Shvetsov-Shilovski	15:10 - 15:30	Alisher Kadyrov
15:40 - 16:10	Coffee Break	15:40 - 16:10	Coffee Break	- 15:30 – 15:50 15:50 – 16:10	Örs Asztalos Sebastian Otranto
Laser field II. (Chair: Alisher Kadyrov)		More complex systems (Chair: Piero Decleva)		16:10 - 16:30	Final remarks
16:10 - 16:40	Akiyoshi Hishikawa	16:10 - 16:40	Péter Dombi	16:30	End of the conference
16:40 - 17:10	Nicolas Camus	16:40 - 17:00	Hicham Agueny		
17:10 - 18:30	Poster session	17:00 - 18:30	Poster session		
		19:30	Conference dinner		

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