

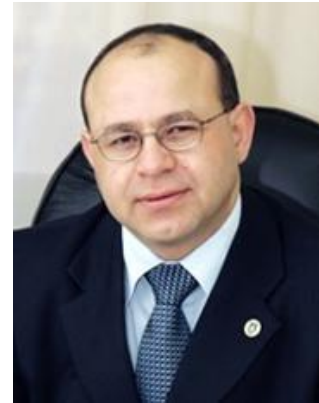
# CURRICULUM VITAE

## Dr. Rami Moustafa Ali

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## EDUCATION

- **B.S.**, Physics, Yarmouk University, Jordan, 1986.
- **Ph.D.**, Physics, Kansas State University, USA, 1993.  
**Dissertation Title:** Dielectronic Recombination on and Electron-Impact Excitation of He-Like Ions and Multi-Electron Processes in Slow Collisions of Highly Charged Ions with Atoms.  
**Dissertation Advisor:** C.L. Cocke

## EMPLOYMENT HISTORY

- Director, Office of International Relations (OIR), The University of Jordan, Amman, Jordan, 2008-present.

*OIR is the international arm of the administration of the University, with the purpose of spearheading and managing the University's international operations, agreements, grants, endowments, scholarships and student exchange and study abroad programs. OIR enriches the University campus by organizing and contributing to international conferences, forums, workshops and seminars.*

- Associate Professor of Physics, The University of Jordan, Amman, Jordan, 2005-present.
- Associate Professor of Physics, The Hashemite University, Zarqa, Jordan, 2002-2005.
- Visiting Research Professor, Kansas State University, USA, summer 2004.
- Associate Professor of Physics, University of Nevada, Reno, USA, 2000-2002.
- Assistant Professor of Physics, University of Nevada, Reno, USA, 1995-2000.
- Postdoctoral Appointee, Argonne National Laboratory, USA, 1993-95.
- Research Assistant, Kansas State University, USA, 1989-93.
- Teaching Assistant and Laboratory Coordinator, Kansas State University, USA, 1988-89.
- Laboratory Supervisor, The University of Jordan, Jordan, 1987-88.
- Teaching Assistant, Yarmouk University, Jordan, 1986-87.

## RESEARCH EXPERIENCE

**Exact Specialty:** Experimental atomic and molecular physics (accelerator-based).

### **Sources and accelerators used:**

- Electron guns.
- Electron-beam ion sources (EBIS).
- Electron cyclotron resonance ion sources (ECRIS).
- One-stage Van de Graaff accelerators.
- Two-stage (Tandem) Van de Graaff accelerators.
- Linear accelerators (LINAC).

### **Atomic and molecular dynamics experience:**

- Electron-ion collisions: excitation, ionization, and recombination.
- Multi-electron processes in low- and high-energy collisions of multiply charged ions with atoms and molecules: electron capture, ionization, electron loss, relaxation processes, dissociation and Coulomb explosion of molecules, astrophysically relevant processes.

### **Atomic structure experience:**

- Few-electron highly charged ions: relativistic effects, correlation effects, forbidden transitions.

### **Experimental techniques experience:**

- Recoil ion momentum spectroscopy (COLTRIMS).
- Auger electron spectroscopy.
- X-ray spectroscopy.
- EUV and VUV spectroscopy.
- Beam-foil spectroscopy.
- Rutherford backscattering spectroscopy.
- Time-of-flight coincidence techniques.
- Position imaging techniques.
- Multi-parameter event-mode data acquisition and control.

## SPECIALIZED TRAINING

- U.S. Department of Energy Core Radiological Training (Radiation Worker I), Argonne National Laboratory, USA, 1993.

## MEMBERSHIPS

- American Physical Society: Division of Atomic, Molecular and Optical Physics.

## AWARDS & HONORS

- Nominated by the College of Arts & Science for the Tibbitt's Distinguished Teacher Award, University of Nevada, Reno, USA, 2000.
- Runner-up of the Alan Bible Teaching Excellence Award, College of Arts & Science, University of Nevada, Reno, USA, 2000.
- The College of Arts & Sciences Graduate Teaching Award, Kansas State University, USA, 1989.

- A Royal Award for Academic Excellence, granted by His Majesty the Late King Hussein of Jordan, 1986 (for ranking first among the 43 students who graduated in the same year).
- Yarmouk Medal for Academic Excellence, Yarmouk University, Jordan, 1986 (for ranking first among the 43 students who graduated in the same year).

## **SUPERVISED RESEARCH**

### **Ph.D. dissertations:**

2. Hanan M. Sa'adaeh (co-supervisor), "Correlation of Backscattered and Recoil Ions in Violent Ion-Atom Collisions by Coincident Rutherford Backscattering Spectrometry," The University of Jordan, Amman, Jordan, January 2010.
1. Ahmad A. Hasan, "Target Outer-Shell Excitation in Multiple-Electron Capture Collisions of Slow Highly-Charged Ions with Many-Electron Atoms," University of Nevada, Reno, USA, December 2000.

### **M.S. theses:**

10. Derar H. Mallah, "Experimental Studies of the Energy Dependence of State-Selective Non-dissociative Single Electron Capture in  $\text{He}^{2+}$  on  $\text{H}_2$  Collisions Using Cold Target Recoil Ion Momentum Spectroscopy," ongoing. Defense expected in April 2016.
9. Fatin D. Dwaib, "Charge Transfer Studies in Intermediate Energy Collisions of Multiply Charged Oxygen Ions with Helium Atoms," The University of Jordan, Amman, Jordan, July 2009.
8. Hossam Y. Eed, "Impact Energy Dependence Study of the Kinetic Energy Release from the Fragmentation of  $\text{CO}^{2+}$  in  $\text{He}^{2+}$  with Carbon Monoxide Collisions," The University of Jordan, Amman, Jordan, December 2008.
7. Rawan H. Al-Qudah, "Studies of State-Selective Nondissociative Single Electron Capture in Intermediate Energy Collisions of  $\text{He}^{2+}$  with Molecular Hydrogen," The University of Jordan, Amman, Jordan, December 2008.
6. Naeem O. Balasmeh, "Studies of Single and Double Electron Capture in  $\text{He}^{2+}$  on Ne Collisions Using Cold Target Recoil Ion Momentum Spectroscopy," The University of Jordan, Amman, Jordan, May 2008.
5. Rajaie Y. Qasem, "Cold Target Recoil Ion Momentum Spectroscopy Studies of Single and Multiple Projectile Electron Loss in  $\text{O}^+$  on He Collisions," The University of Jordan, Amman, Jordan, May 2008.
4. Ayman A. Al-Khateeb (co-supervisor), "Simulation and Operation of the Recoil Ion Spectrometer of the COLTRIMS Apparatus at the University of Jordan," The Hashemite University, Zarqa, Jordan, December 2007.
3. Zainab J. Al-Asfar (co-supervisor), "Thermoluminescence TL-Response and Characterization of Thin Film Systems Deposited onto Si Substrates," The University of Jordan, Amman, Jordan, January 2007.
2. Farhat. Eissa, "State-Selective Charge Transfer Studies Relevant to Solar Wind-Comet Interactions," University of Nevada, Reno, USA, August 2002.
1. Haci M. Cakmak, "In Search of Target Excitation in Low Energy Ion-Atom Collisions," University of Nevada, Reno, USA, November 1996.

### **Undergraduate senior theses:**

2. Erik D. Emmons, "Ion-Atom Collisions Studied by Simultaneous Auger-Electron and Recoil-Ion Momentum Spectroscopy," University of Nevada, Reno, USA, May 2000.
1. Timur Y. Osipov, "Implementation of Kmax: A Versatile Data Acquisition and Control System," University of Nevada, Reno, USA, February 1997.

### **Postdoctoral fellows:**

2. Guillermo Hinojosa (jointly with Prof. R.A. Phaneuf), University of Nevada, Reno, USA, September 1998-December 2000.
1. Hocine Merabet, University of Nevada, Reno, USA, March 1996-March 1998.

## **PROFESSIONAL SERVICES**

### **Refereed for:**

- Physical Review Letters.
- Physical Review A.
- Physica Scripta.
- Canadian Journal of Physics.
- Jordan Journal of Physics
- Dirasat (published by The University of Jordan)
- U.S. National Science Foundation (NSF), Atomic and Molecular Dynamics Program grant proposals.
- U.S. Civilian Research and Development Foundation for the Independent States of the Former Soviet Union, grant proposals.
- Nevada Space Grant Consortium, student project grant proposals.

### **Committees:**

- SESAME Jordanian Users Committee
- Organizing Committee, First Jordanian Synchrotron Users' Workshop, The University of Jordan, Amman, Jordan, 10 May 2006
- Organizing Committee, Second Jordanian Synchrotron Users' Workshop, Applied Science University, Amman, Jordan, 10-12 September 2006
- Organizing Committee, Third Jordanian Synchrotron Users' Workshop, The University of Jordan, Amman, Jordan, 25 April 2007
- Scientific Program Committee, Sixth SESAME Users' Meeting, Amman, Jordan, 17-19 November, 2007
- Local Organizing Committee, Sixth SESAME Users' Meeting, Amman, Jordan, 17-19 November, 2007

## **PUBLICATIONS**

51. **R. Ali**, P. Beiersdorfer, C.L. Harris, and P.A. Neill, "Charge-exchange x-ray spectra: Evidence for significant contributions from radiative decays of doubly excited states," Phys. Rev. A **93**, 012711 (2016).
50. H. Sa'adeh, **R. Ali**, and D.-E. Arafah, "Charge-state distributions of energetic  $^4\text{He}$  ions backscattered from Kr gas target," Nucl. Instrum. and Meth. B **271**, 33 (2012).
49. H. Sa'adeh, **R. Ali**, and D.-E. Arafah, "Coincident Rutherford Backscattering Spectrometry: A novel technique for measuring charge state distributions in violent ion-atom collisions," Nucl. Instrum. and Meth. B **269**, 2111 (2011).

48. **R. Ali**, P.A. Neill, P. Beiersdorfer, C.L. Harris, D.R. Schultz, and P.C. Stancil, "Critical Test of Simulations of Charge-Exchange-Induced X-Ray Emission in the Solar System," *Astrophys. J. Lett.* **716**, L95 (2010).
47. **Rami Ali**, "Simultaneous COLTRIMS And X-Ray Spectroscopic Studies Relevant To Cometary, Planetary, And Heliospheric X-Ray Emission," in proceedings of the 15<sup>th</sup> International Conference on Atomic Processes in Plasmas, edited by J. D. Gillaspy, J. J. Curry, and W. L. Wiese, AIP Conf. Proc. No **926** (AIP, New York, 2007), p. 216.
46. **R. Ali**, P.A. Neill, C.L. Harris, P. Beiersdorfer, D.R. Schultz, M.J. Rakovic', P.C. Stancil, and J.G. Wang, "On the significance of the contribution of multiple-electron capture processes to cometary X-ray emission," *Astrophys. J.* **629**, L125 (2005).
45. A.S. Alnaser, B. Ulrich, X-M. Tong, I.V. Litvinyuk, C.M. Maharjan, P. Ranitovic, T. Osipov, **R. Ali**, S. Ghimire, Z. Chang, C.D. Lin, and C.L. Cocke, "Simultaneous real-time tracking of coherent wave packets on two different potential curves in H<sub>2</sub><sup>+</sup> and D<sub>2</sub><sup>+</sup>," (Rapid Communications) *Phys. Rev. A* **72**, 030702(R) (2005).
44. E. Wells, K.D. Carnes, H. Tawara, **R. Ali**, E.Y. Sidky, C. Illescas, and I. Ben-Itzhak, "One- and two-electron processes in collisions between hydrogen molecules and slow highly charged Ions," *Nucl. Instrum. and Meth. B* **241**, 101 (2005).
43. E.Y. Kamber, **R. Ali**, and A.A. Hasan, "State-selective single-electron capture in Ne<sup>4+</sup>-He collisions," *Nucl. Instrum. and Meth. B* **205**, 577 (2003).
42. P. C. Stancil, J. G. Wang, M. J. Rakovic', D. R. Schultz, and **R. Ali**, "Charge transfer data needs for cometary X-ray emission modeling," in proceedings of 3rd International Conference on Atomic and Molecular Data and Their Applications ICAMDATA, edited by D. R. Schultz, P. S. Krstic', and F. Ownby, AIP Conf. Proc. No. **636** (AIP Press, Melville, NY, 2002), p. 144.
41. A. A. Hasan, F. Eissa, **R. Ali**, D. R. Schultz, and P. C. Stancil, "State-selective charge transfer studies relevant to solar wind-comet interactions," *Astrophys. J.* **560**, L201 (2001).
40. P. Beiersdorfer, G.V. Brown, L. Hildebrandt, K. L. Wong, and **R. Ali**, "Multiparameter data acquisition system for spectroscopy," *Rev. Sci. Instrum.* **72**, 508 (2001).
39. **Rami Ali**, Ahmad A. Hasan, Erik D. Emmons, and Guillermo Hinojosa, "New insights into multielectron processes in slow collisions of highly charged ions with many-electron neutral targets," in proceedings of the Twelfth American Physical Society Topical Conference on Atomic Processes in Plasmas, edited by R.C. Mancini and R.A. Phaneuf, AIP Conf. Proc. No. **547** (AIP, New York, 2000), p. 147.
38. A.A. Hasan, E.D. Emmons, G. Hinojosa, and **R. Ali**, "Evidence for significant target outer-shell excitation in multiple-electron capture collisions of slow highly charged ions with many-electron atoms," *Phys. Rev. Lett.* **83**, 4522 (1999).
37. E.D. Emmons, A.A. Hasan, and **R. Ali**, "Multiple-electron capture processes in 70 keV <sup>15</sup>N<sup>7+</sup> + Ar collisions: A triple-coincidence study," *Phys. Rev. A* **60**, 4616 (1999).
36. H. Merabet, H.M. Cakmak, E.D. Emmons, A.A. Hasan, T. Osipov, R.A. Phaneuf, and **R. Ali**, "Production and relaxation pathways of multiply excited states in slow highly charged ion-atom collisions," (Rapid Communications) *Phys. Rev. A* **59**, R3158 (1999).

35. H. Merabet, H.M. Cakmak, A.A. Hasan, E.D. Emmons, T. Osipov, R.A. Phaneuf, and **R. Ali**, "Investigation of multi-electron processes in 60 keV  $O^{6+} + Ar$  collisions using a triple coincidence technique," in Proceedings of the Fifteenth International Conference on the Application of Accelerators in Research and Industry, edited by J.L. Duggan and I.L. Morgan, AIP Conf. Proc. No. **475** (AIP, New York, 1999), p. 99.
34. V. Mergel, R. Dörner, M. Achler, Kh. Khayyat, S. Lencinas, J. Euler, O. Jagutzki, S. Nüttgens, M. Unverzagt, L. Spielberger, W. Wu, **R. Ali**, J. Ullrich, H. Cederquist, A. Salin, C.J. Wood, R.E. Olson, Dz. Belkic, C.L. Cocke, and H. Schmidt-Böcking, "Intra-atomic electron-electron-scattering in p-He collisions (Thomas process) investigated by cold target recoil ion momentum spectroscopy," Phys. Rev. Lett. **79**, 387 (1997).
33. M.P. Stockli, **R. M. Ali**, C.L. Cocke, S. Cowherd, D. Fry, P.E. Gibson, S. Lampenscherf, R.A. Mack, D.C. Parks, M.L.A. Raphaelian, L. Rebohle, N. Renard, P. Richard, T.N. Tipping, T. Werner, J. Werrick, S. Winecki, and W. Wu, "Production, operation and status of the KSU CRYEBIS facility," Physica Scripta **T71**, 188 (1997).
32. W. Wu, K.L. Wong, E.C. Montenegro, **R. Ali**, C.Y. Chen, C.L. Cocke, R. Dörner, V. Frohne, J.P. Giese, V. Mergel, W.E. Meyerhof, M. Raphaelian, H. Schmidt-Böcking, and B. Walch, "Electron-electron interaction in the ionization of  $O^{7+}$  by He," Phys. Rev. A. **55**, 2771 (1997).
31. **R. Ali**, I. Ahmad, H.G. Berry, R.W. Dunford, D.S. Gemmell, M. Jung, E.P. Kanter, P.H. Mokler, A.E. Livingston, S. Cheng, and L.J. Curtis, "Shape of the two-photon-continuum emission from the  $1s2s\ ^1S_0$  state in He-like krypton," Phys. Rev. A **55**, 994 (1997).
30. **R. Ali**, H.G. Berry, R.W. Dunford, D.S. Gemmell, E.P. Kanter, T. LeBrun, H.M. Reichenbach, and L. Young, "The VUV spectrum from fast heavy-ion induced excitation of  $C_{60}$ ," J. Phys. B: At. Mol. Opt. Phys. **29**, 5607 (1996).
29. V. Frohne, S. Cheng, **R.M. Ali**, M.L.A. Raphaelian, C.L. Cocke, and R. Olson, "Measurements of recoil and projectile momentum distributions for 19-MeV  $F^{9+} + Ne$ ," Phys. Rev. A. **53**, 2407 (1996).
28. **R. Ali**, H.G. Berry, S. Cheng, R.W. Dunford, H. Esbensen, D.S. Gemmell, E.P. Kanter, T. LeBrun, and L. Young, "The interactions of high-energy, highly charged ions with fullerenes," in Advances in Nuclear Dynamics 2, edited by W. Bauer and G.D. Westfall, (Plenum Press, New York, 1996), p. 279.
27. **R. Ali**, H.G. Berry, S. Cheng, R.W. Dunford, H. Esbensen, D.S. Gemmell, E.P. Kanter, T. LeBrun, L. Young, and W. Bauer, "The interactions of high-energy, highly charged Xe ions with buckyballs," Nucl. Instrum. and Meth. B **96**, 545 (1995).
26. R. Dörner, V. Mergel, **R. Ali**, U. Buck, C.L. Cocke, K. Froschauer O. Jagutzki, S. Lencinas, W.E. Meyerhof, S. Nüttgens, R.E. Olson, H. Schmidt-Böcking, L. Spielberger, K. Tökesi, J. Ullrich, M. Unverzagt, and W. Wu, "Electron-electron interaction in projectile ionization," Nucl. Instrum. and Meth. B **98**, 367 (1995).
25. A.E. Livingston, K.W. Kukla, C.M. Vogel Vogt, H.G. Berry, R.W. Dunford, D.S. Gemmell, E.P. Kanter, J. Suleiman, **R. Ali**, S. Cheng, and L.J. Curtis, "Fine structure energies for the  $1s2s^3S-1s2p^3P$  transition in helium-like ions," Nucl. Instrum. and Meth. B **98**, 28 (1995).

24. **R. Ali**, I. Ahmad, H.G. Berry, R.W. Dunford, D.S. Gemmell, E.P. Kanter, P.H. Mokler, A.E. Livingston, S. Cheng, and L.J. Curtis, "Spectral distribution of the two-photon decay of He-like krypton," Nucl. Instrum. and Meth. B **98**, 69 (1995).
23. W. Wu, J.P. Giese, Z. Chen, **R. Ali**, C.L. Cocke, P. Richard, and M. Stöckli, "Evidence for population of highly asymmetric states in double electron capture by  $O^{7,8+}$  and  $N^{7+}$  colliding with He at low to intermediate velocities," Phys. Rev. A **50**, 502 (1994).
22. W. Wu, K.L. Wong, **R. Ali**, C.Y. Chen, C.L. Cocke, V. Frohne, J.P. Giese, M. Raphaelian, B. Walch, R. Dörner, V. Mergel, H. Schmidt-Böcking, and W.E. Meyerhof, "Experimental separation of electron-electron and electron-nuclear contributions to ionization of fast hydrogenlike ions colliding with He," Phys. Rev. Lett. **72**, 3170 (1994).
21. R. Dörner, V. Mergel, **R. Ali**, U. Buck, C.L. Cocke, K. Froschauer, O. Jagutzki, S. Lencinas, W.E. Meyerhof, S. Nüttgens, R.E. Olson, H. Schmidt-Böcking, L. Spielberger, K. Tökesi, J. Ullrich, M. Unverzagt, and W. Wu, "Electron-electron interaction in projectile ionization investigated by high resolution recoil ion momentum spectroscopy," Phys. Rev. Lett. **72**, 3166 (1994).
20. **R. Ali**, C.L. Cocke, M.L.A. Raphaelian and M. Stockli, "Multi-electron processes in 10 keV/u  $Ar^{q+}$  ( $5 \leq q \leq 17$ ) on Ar collisions," Phys. Rev. A **49**, 3586 (1994).
19. W. Wu, J.P. Giese, I. Ben-Itzhak, C.L. Cocke, P. Richard, M. Stockli, **R. Ali**, H. Schöne, and R.E. Olson, "Velocity dependence of one- and two-electron processes in intermediate-velocity  $Ar^{16+} + He$  collisions," Phys. Rev. A **48**, 3617 (1993).
18. B.P. Walch, S. Maleki, **R. Ali**, M.P. Stöckli, M.L.A. Raphaelian, C.L. Cocke and B.D. DePaola, "Enhancement of charge capture from laser-excited target by highly charged ions," (Rapid Communications) Phys. Rev. A **47**, R3499 (1993).
17. **R. Ali**, C.L. Cocke, M.L.A. Raphaelian and M. Stockli, "Angular distribution measurements in multiple-electron capture collisions of 50 keV  $Ar^{15+}$  with Ar," (Letter to the Editor) J. Phys. B: At. Mol. Opt. Phys. **26**, L685 (1993) .
16. V.Frohne, S. Cheng, **R. Ali**, M. Raphaelian, C.L. Cocke and R.E. Olson, "Measurements of recoil ion longitudinal momentum transfer in multiply ionizing collisions of fast heavy ions with multielectron targets," Phys. Rev. Lett. **71**, 696 (1993).
15. **R. Ali**, C.L. Cocke, M.L.A. Raphaelian and M. Stockli, "On the radiative stabilization in slow double-electron capture collisions of highly charged ions with neutral atoms," (Letter to the Editor) J. Phys. B: At. Mol. Opt. Phys. **26**, L177 (1993).
14. J.P. Giese, W. Wu, I. Ben-Itzhak, C.L. Cocke, **R. Ali**, P. Richard, M. Stöckli and H. Schöne, "One and two electron processes in collisions of highly charged ions with He at velocities around 1 a.u.," in the Physics of Electronic and Atomic Collisions (XVIII International Conference, Aarhus, Denmark, July 1993), edited by Torkild Andersen *et al.*, AIP Conf. Proc. No. **295** (AIP, New York, 1993), p.585.
13. B. d'Etat, J.P. Briand, G. Ban, L. de Billy, P. Briand, J.P. Desclaux, G. Melin, T. Lamy, M. Lamboley, P. Richard, M. Stockli, **R. Ali**, N. Renard, D. Schneider, M. Clark, P. Beiersdorfer and V. Decaux, "X ray spectroscopy of highly charged ions interacting with surfaces," in VIth International Conference on the Physics of Highly Charged Ions, edited by Patrick Richard *et al.*, AIP Conf. Proc. No. **274** (AIP, New York, 1993), p. 592.

12. W. Wu, J.P. Giese, P. Richard, M. Stockli, **R. Ali**, C.L. Cocke and H. Schöne, “One and two electron processes in 0.9 keV/u to 60 keV/u  $\text{Ar}^{16+} + \text{He}$  collisions,” in *VIth International Conference on the Physics of Highly Charged Ions*, edited by Patrick Richard *et al.*, AIP Conf. Proc. No. **274** (AIP, New York, 1993), p. 147.
11. C.L. Cocke, M. Stockli, **R. Ali**, M. Schulz and C.P. Bhalla, “Atomic physics experiments on the KSU EBIS,” in *The 5-th International Symposium on Electron Beam Ion Sources and their Applications*, edited by E.D. Donets and I.P. Yudin, (Scientific Research Firm “I.V.K.-SOFT”, 1993), p. 101.
10. Martin P. Stockli, **R.M. Ali**, C.L. Cocke, M.L.A. Raphaelian, P. Richard and T.N. Tipping, “The KSU-CRYEBIS: A unique ion source for low-energy highly-charged ions,” in *The 5-th International Symposium on Electron Beam Ion Sources and their Applications*, edited by E.D. Donets and I.P. Yudin, (Scientific Research Firm “I.V.K.-SOFT”, 1993), p. 82.
9. **R. Ali**, V. Frohne, C.L. Cocke, M. Stockli, S. Cheng and M.L.A. Raphaelian, “Q-value measurements in charge transfer collisions of highly charged ions with atoms by recoil longitudinal momentum spectroscopy,” *Phys. Rev. Lett.* **69**, 2491 (1992).
8. Martin P. Stockli, **R.M. Ali**, C.L. Cocke, M.L.A. Raphaelian, P. Richard and T.N. Tipping, “The KSU-CRYEBIS: A unique ion source for low-energy highly charged ions,” *Rev. Sci. Instrum.* **63**, 2822 (1992).
7. **R. Ali**, C.P. Bhalla, C.L. Cocke, M. Schulz and M. Stockli, “Electron-ion recombination experiments on the KSU EBIS,” in *Recombination of Atomic Ions*, edited by W.G. Graham *et al.*, (Plenum Press, New York, 1992), p. 193.
6. **R. Ali**, C.P. Bhalla, C.L. Cocke, M. Schulz and M. Stockli, “X-rays from electron bombardment of heliumlike argon,” *Z. Phys. D* **21**, s207 (1991).
5. **R. Ali**, C.P. Bhalla, C.L. Cocke, M. Schulz and M. Stockli, “Dielectronic recombination on and electron-impact excitation of heliumlike argon,” *Phys. Rev. A* **44**, 223 (1991).
4. M. Schulz, **R. Ali**, C.L. Cocke, S. Hagmann, M. Stockli and H. Schmidt-Böcking, “Recent experiments on the KSU CRYEBIS,” *Nucl. Instrum. and Meth. B* **56/57**, 1161 (1991).
3. C.L. Cocke, **R. Ali**, C.P. Bhalla, M. Stockli and M. Schulz, “Recent experiments on the KSU EBIS,” *Nucl. Instrum. and Meth. B* **53**, 432 (1991).
2. M.P. Stockli, **R. M. Ali**, K.R. Buck, A.C. Canelos, C.L. Cocke, P.E. Gibson, P.E. Lammert, G.J. Lehman, C.L. Lewis, R.A. Mack, B.C. McLaren, M.D. Morrison, M. Schulz, J.M. Socolofsky and S.D. Worm, “The KSU-CRYEBIS: A unique accelerator system for low energy, highly charged ions,” in *Symposium of North-Eastern Accelerator Personnel*, edited by T.N. Tipping and R.D. Krause, (World Scientific, Singapore, 1991), p. 79.
1. **R. Ali**, C.P. Bhalla, C.L. Cocke and M. Stockli, “Dielectronic recombination on heliumlike argon,” *Phys. Rev. Lett.* **64**, 633 (1990).



## CONFERENCE CONTRIBUTIONS

Over 60 contributed poster and oral presentations in meetings and international conferences, symposia, and workshops.

## PHYSICS INVITED TALKS

17. "Charge Exchange Measurements Using Simultaneous X-Ray and COLTRIMS Measurements," 15<sup>th</sup> International Conference on the Physics of Highly Charged Ions (HCI2010), Shanghai, China, August-September 2010.
16. "Simultaneous COLTRIMS And X-Ray Spectroscopic Studies Relevant To Cometary, Planetary, And Heliospheric X-Ray Emission," Colloquium, Department of Physics, University of Nevada, Reno, Nevada, USA, July 2008.
15. "COLTRIMS: A Reaction Microscope for Studying the Interaction of Synchrotron Radiation with Atoms, Molecules, and Clusters," 6<sup>th</sup> SESAME Users' Meeting, Amman, Jordan, November, 2007.
14. "Training and Educating Future Generations of Middle East Scientists Using SESAME and JOVAC," IAEA Technical Meeting on Enhancing Nuclear Science Education and Training using Accelerators, Accra, Ghana, Septemebr 2007.
13. "Coincident COLTRIMS and X-ray spectroscopic studies of charge exchange processes," X-ray Emission in the Solar System Workshop, Harvard Smithsonian Center for Astrophysics, Cambridge, Massachusetts, USA, July 2007.
12. "Simultaneous COLTRIMS And X-Ray Spectroscopic Studies Relevant To Cometary, Planetary, And Heliospheric X-Ray Emission," the 15<sup>th</sup> International Conference on Atomic Processes in Plasmas (APiP), Gaithersburg, Maryland, USA, March 2007.
11. "Unraveling Ionic and Photonic Interactions with Atoms and Molecules Using COLTRIMS, Auger, and X-ray Spectroscopy," the 2<sup>nd</sup> Jordanian Synchrotron Users Workshop, Amman, Jordan, September 2006.
10. "Multielectron Processes in Low Energy Collisions of Multiply Charged Ions with Many-Electron Atoms," the XXII International Conference on Photonic, Electronic, and Atomic Collisions (ICPEAC), Santa Fe, New Mexico, USA, July 2001.
9. "Target Excitation in Multiple-Electron Capture Collisions of Slow Multiply Charged Ions with Many-Electron Targets," the 16<sup>th</sup> International Conference on the Applications of Accelerators in Research and Industry (CAARI), Denton, Texas, USA, November 2000.
8. "New Insights into Multielectron Processes in Slow Collisions of Highly Charged Ions with Many-Electron Neutral Targets," the 12th American Physical Society Topical Conference on Atomic Processes in Plasmas, Reno, Nevada, USA, March 2000.
7. "Attempts Toward a Deeper Understanding of Multielectron Processes in Slow Highly Charged Ion-Atom Collisions," annual meeting of the Division of Atomic, Molecular and Optical Physics (DAMOP) of the American Physical Society, Washington, DC, USA, April 1997.

6. "Multielectron Phenomena in Low Energy Collisions of Multiply Charged Ions with Atoms," Department of Physics, University of Nevada, Reno, USA, October 1994.
5. "X-ray Emission in Charge-Transfer Collisions of Slow Highly Charged Ions with Neutral Atoms," 16<sup>th</sup> International Conference on X-ray and Inner-Shell Processes, Debrecen, Hungary, July 1993.
4. "Multielectron Processes in Slow Collisions of Highly Charged Ions with Atoms," Institute for Nuclear Physics, Frankfurt University, Frankfurt, Germany, June 1993.
3. "Multielectron Processes in Low Energy Collisions of Highly Charged Ions with Atoms," Physics Division, Argonne National Laboratory, Argonne, Illinois, USA, May 1993.
2. "On the Radiative Stabilization in Slow Double-Electron Capture Collisions of Highly Charged Ions with Atoms," V-Division, Lawrence Livermore National Laboratory, Livermore, California, USA, May 1993.
1. "Q-Value Measurements in Charge Transfer Collisions of Highly Charged Ions with Atoms by Recoil Longitudinal Momentum Spectroscopy," (Hot Topics Session), VI<sup>th</sup> International Conference on the Physics of Highly Charged Ions (HCI), Manhattan, Kansas, USA, September-October 1992.

## **OTHER INVITED TALKS**

2. "UJ in the Global Age," Higher Education in the Global Age Conference organized in conjunction with the dedication of the downtown campus of NYU Abu Dhabi, Abu Dhabi, UAE, December 2009.
1. "EMECW: UJ's Most Effective Academic Mobility Mechanism Yet," 21<sup>st</sup> Annual European Association for International Education (EAIE) Conference, Madrid, Spain, September 2009.

## **FUNDED PROPOSALS**

5. Title: Studies of Multi-electron Processes in Ion-Atom Collisions Using Cold Target Recoil Ion Momentum Spectroscopy (COLTRIMS)  
Principal Investigators: Rami Ali  
Agency: The University of Jordan  
Submission Date: November 2006  
Amount Awarded: (24,600 JOD  $\approx$  \$34,720)
4. Title: Building a coincident multi-hit COLTRIMS imaging apparatus: An experimental tool to study electron-atom and electron-molecule collisions  
Principal Investigators: Feras Afaneh (project coordinator)  
Other Scientists: Rami Ali, Reinhard Dörner, and Horst Schmidt-Böcking Jamal Al-Jundi, Khalid Al-Ani, Hazem Akel, and Mahmoud Abu-Allaban  
Agency: Deutsche Forschungsgemeinschaft (DFG) (German Science Foundation) (69,500 Euro), Institute for Nuclear Physics of the J.W. Goethe University-Frankfurt (39,000 Euro), and The Hashemite University (39,500 Euro)  
Submission Date: April 2004

Amount Awarded: (148,000 Euro)

3. Title: Production and relaxation pathways of multiply excited atomic and molecular ions in slow collisions of highly charged ions with targets beyond He and H<sub>2</sub>  
Principal Investigator: Rami M. Ali  
Agency and Program: The National Science Foundation (NSF), USA; Atomic and Molecular Dynamics Program  
Submission Date: September 2000  
Amount Awarded: (\$243,600)
2. Title: Production and relaxation pathways of multiply excited states in slow highly charged ion-atom collisions  
Principal Investigator: Rami M. Ali  
Agency and Program: The National Science Foundation (NSF), USA; Atomic and Molecular Dynamics Program  
Submission Date: September 1997  
Amount Awarded: (\$213,997)
1. Title: Dynamical electron correlation effects in collisions of slow highly charged ions with many-electron atoms  
Principal Investigator: Rami M. Ali  
Agency and Program: University of Nevada, Reno, USA, Junior Faculty Research Award  
Submission Date: February 1997  
Amount Awarded: (\$10,000)

## **OTHER RESEARCH FUNDING**

2. Title: Nevada Chemical Physics Cluster  
Principal Investigators: R. Burkhart, P. Altick, and S. Lepp  
Agency and Program: The National Science Foundation (NSF), USA; Experimental Program for Stimulating Competitive Research (EPSCoR)  
Role of Rami M. Ali: Target Faculty of the Chemical Physics Cluster  
Time Period: September 1995- August 1997  
Funding Received by Rami M. Ali: \$169,000
1. Title: Startup Funds  
Principal Investigators: Rami M. Ali  
Agency and Program: University of Nevada, Reno, USA; The Graduate School  
Time Period: January 1995- June 1997  
Funding Amount: \$210,000