

## CURRICULUM VITAE

### PERSONAL DATA

*Date & Place of birth* 05.07.1962; Dushanbe, USSR  
*Marital status:* married + 2  
*Office Address:* School of Chemistry, Tel-Aviv University, Tel-Aviv  
69978, Israel; ph: 972-3-6409412  
*E-mail:* EPHRAIM@POST.TAU.AC.IL  
*Languages:* Hebrew, Russian, English

### EDUCATION

2/1991 - 2/1994 Tel-Aviv University, Tel-Aviv, Israel  
*Postdoctoral training in quantum & computational chemistry*  
*Name of Supervisor: Prof. U. Kaldor*  
9/1979 - 8/1988 Leningrad State University, Leningrad, USSR  
*Ph. D. in theoretical & mathematical physics (1988)*  
*Name of Supervisor: Prof. M. Adamov*  
*B.S. & M.S. in theoretical & computational physics (1985)*  
*Names of Supervisors: Prof. L. Labzowsky , Prof. M. Adamov*

### ACADEMIC AND PROFESSIONAL EXPERIENCE

12/2005 - Present School of Chemistry, Tel-Aviv University, Tel-Aviv, Israel  
*Principal Research Fellow (KAMEA Research Professor)*  
4/1998 – 12/2005 School of Chemistry, Tel-Aviv University, Tel-Aviv, Israel  
*Senior Research Associate (Senior Lector)*  
3/1994 - 3/1998 School of Chemistry, Tel-Aviv University, Tel-Aviv, Israel  
*Senior Scientific Researcher*  
9/1989 - 8/1990 The Municipal Center for Scientific & Technical  
Activity of Young Scientists, Dushanbe, USSR  
*Manager of the Computational Laboratory*  
9/1988 - 8/1989 Leningrad State Pharmaceutical & simultaneously Leningrad  
State Ship Building Institutes, Leningrad, USSR  
*Senior Physicist and Assistant of Professor of Physics*

### TEACHING EXPERIENCE:

1985 - 88 Leningrad State University, Lecture Course on Quantum Chemistry  
1988 -89 Leningrad Pharmaceutical Institute, Course on General Physics  
1988 - 89 Leningrad Shipbuilding Institute, Course on Modern Physics  
1998 - 03 Tel-Aviv University, General Chemistry Laboratory (*lab assistant*)  
2004-Present Tel-Aviv University, Computational Chemistry Laboratory (*lab header*)

## **RESEARCH INTERESTS AND EXPERIENCE:**

- New theoretical methods for treatment of relativistic, QED and correlation effects
- Benchmark ab-initio calculations of atomic and molecular properties
- Structure and properties of relativistic quantum dots

## **INVITED SCIENTIFIC VISITS WITH SEMINARS:**

Winter 1996	University of Bonn, Bonn, Germany
Summer 1997	University of Helsinki, Helsinki, Finland
Summer 1999	Free University of Amsterdam, Amsterdam, Netherlands
Summer 1998;1999	Simon Fraser University, Burnaby, BC, Canada
Summer 2000	University of Puerto-Rico, San-Juan, Puerto-Rico, USA
August 2001-9	University of South Denmark, Odense, Denmark
May 2002	University of Florida, Gainesville, USA
May 2003, Dec 2009	Petersburg Nuclear Physics Institute, Petersburg, Russia
May 2004	Louis Pasteur University, Strasbourg, France
July 2005	GSI, Darmstadt, Germany
July 2007	FIAS, Frankfurt, Germany
August 2007	University of Calgary, Calgary, Canada
August 2010	University of Nevada, Reno, USA
May 2011	University of St Petersburg, St Petersburg, Russia
August 2012	University of Vienna, Vienna, Austria
July 2013	University of Banska Bystrica, Slovakia
July 2016	The Comenius University, Bratislava, Slovakia
August 2016	PU, PNPI, St. Peterburg, Russia
April 2016	University of Tbilisi, Tbilisi, Georgia
July 2017	Groningen University, Groningen, The Netherlands
August 2017	Prague University, Prague, Czech Republic
November 2017	Moscow University, Moscow, Russia

## **M.Sc. STUDENTS SUPERVISED :**

T. Zelovich "*Properties of Heavy Elements by the Relativistic Coupled Cluster Methods*", 2010

## **PhD. STUDENTS SUPERVISED :**

A. Borchshevsky "*Extension of the intermediate Hamiltonian Fock space coupled cluster method and application to problems of heavy and superheavy elements*", 2008  
H. Yakobi "*Extensions of the relativistic multireference coupled cluster method and applications to properties other than energy*" , 2009

## **RESEARCH GRANTS (CI):**

1997-2000	INTAS, Brussels, ``Generalized Relativistic Effective Core Potentials for High-Accuracy Coupled-cluster Calculations".
1997-2000	Israel Science Foundation, ``High Accuracy Computation of Atomic and Molecular Properties Including Relativistic Effects".
1999-2003	U.S.--Israel Binational Science Foundation, ``High Accuracy Computation of Inner-Shell Processes in Atoms and Molecules".
2000-2003	Israel Science Foundation, ``Novel Coupled Cluster Methods".
2003-2005	U.S.--Israel Binational Science Foundation, ``High Accuracy Treatment of Molecules and Clusters Containing Heavy Atoms".
2003-2007	Israel Science Foundation, ``High Accuracy Coupled Cluster Calculations of Short-Lived Atomic and Molecular States".

### **FELLOWSHIPS, HONORS AND AWARDS:**

- 1982-1985 The Lenin Fellowship for outstanding BS and MS students  
1995 The Gishur Fellowship of the Israeli Ministry of Science  
1996-1998 The Gileadi Fellowship of the Israeli Ministry of Absorption  
2000 The Lize Meitner Prize for Computational Quantum Chemistry

### **PRESENTATIONS IN INTERNATIONAL SCIENTIFIC MEETINGS:**

- 1988 International Seminar for theory of atoms and atomic spectra, Tbilisi, Georgia.  
1994 The 34 Sanibel Symposia, Ponte Vedra Beach, Florida, USA  
1994 The International Meeting on Molecular Spectroscopy, Semolnice, Slovakia  
1994 The 8 International congress of Quantum Chemistry, Prague, Czech Republic  
1995 Workshop on Non-Perturbative Many-Body Methods, Bad Honnef, Germany  
1995 Conference on relativistic effects in chemistry, Castelvecchio Pascoli, Italy  
1996 WATOC-96, Jerusalem, Israel  
1997 Research conference on superheavy elements, Granada, Spain  
1997 The 9 International Congress of Quantum Chemistry, Atlanta, Georgia, USA  
1997 The Electron Correlation Workshop, Cedar Key, Florida, USA  
1998 The 12 Canadian Spectroscopic Conference, Vancouver, BC, Canada  
1999 Conference on relativity and correlation, Acquafredda di Maratea, Italy  
2000 The 10 International Congress of Quantum Chemistry, Nice, France  
2000 Fourth Workshop on Quantum Systems, Marly-le-Roi, France  
2001 Relativistic Effects in Chemistry and Physics, Kerkrade, The Netherlands  
2001 Finish Symposium on Quantum Chemistry, Kuusamo, Finland  
2002 Israel Theochem 2002, Hebrew University, Jerusalem, Israel  
2003 Fock School on quantum and computational chemistry, Novgorod, Russia  
2003 Workshop on electron correlation methods, Bad Herrenalb, Germany  
2003 REHE-2003 conference, Berlin, Germany  
2003 XI International congress of Quantum Chemistry, Bonn, Germany  
2004 HAMEC meeting, Cambridge, England  
2004 Malrieu conference on correlation effects, Lagrasse, France  
2005 Nanoscience Workshop, Karlsruhe, Germany  
2006 XII International congress of Quantum Chemistry, Kyoto, Japan  
2006 Chemical accuracy and beyond, Satellite meeting of ICQC-XII, Tokyo, Japan  
2006 ICCMSE symposium, Crete, Greece  
2006 QSCP-XI, St Petersburg, Russia  
2007 REHE-2007, Obernai, France  
2007 SAMQCP, Torun, Poland  
2008 Coupled Cluster theory meeting, Seattle, USA  
2008 6-th Congress of TCP Society, Vancouver, Canada  
2008 TACC, Shanghai, China  
2008 WATOC-2008, Sidney, Australia  
2008 Satellite meeting WATOC-2008, Auckland, New Zealand  
2009 Workshop on electron correlation methods, Oslo, Norway  
2009 XIII International congress of Quantum Chemistry, Helsinki, Finland  
2010 REHE-2010, Beijing, China  
2011 WATOC-2011, Santiago-DeCampostella, Spain  
2012 XIV International congress of quantum chemistry, Boulder, Colorado  
2014 WATOC-2014, Santiago, Chile

2014 STC 2014, Austria, Vienna  
2014 REHE-2014, Smolinice, Slovakia  
2015 TAN-2015, Urabandai, Fukushima, Japan  
2015 XV International congress of quantum chemistry, Beijing, China  
2015 New Frontiers of Relativistic Quantum Chemistry, Beijing, China  
2015 RAEST-2015, Nanjing, China  
2015 Open Shells, open questions, Middelfart, Denmark  
2016 Nobel Symposium NS160, Lund, Sweden  
2016 8th Molecular Quantum Mechanics - MQM 2016, Uppsala, Sweden  
2016 Nuclear Physics 2016, St. Petersburg, Russia  
2016 ISTCP 2016 - Grand Forks, ND, USA  
2017 WATOC 2017, Munich, Germany  
2017 REHE-2017, Marburg, Germany  
2017 Nuclear Physics-2017, St. Petersburg, Russia

**PUBLICATIONS:**

108 publications in academic periodicals and books (attached)