



**Amirkabir University
of Technology**

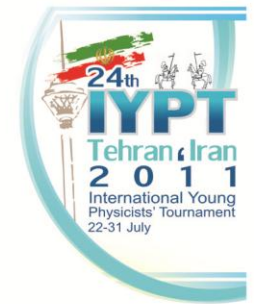


**Arian Young Innovative
Minds Institute
AYIMI**

Booklet



Iranian School of Health Physics
Faculty of Nuclear Engineering and Physics
Amirkabir University of Technology
<http://www.iypt.ir>



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Greeting

International Young Physicists' Tournament President's Message



Dear All,

Welcome to the 24th International Young Physicists' Tournament in Iran. I have attended each IYPT since 1998 and it is with great sadness that I am unable to join you for this event. I have loved every moment of my time at IYPT and it feels very wrong to be missing this historic occasion.

I thank the Ariaian Young Innovative Minds Institute and Amirkabir University of Technology for their joint hosting of this event. I am sure that Dr. Izadi and her Local Organizing Committee will deliver an exciting competition and allow you to enjoy the rich cultural

history of Iran. I would also like to thank Dr. Martin Plesch for stepping into my role this year. As many of you know, Dr. Plesch's first experience of IYPT was in the role of a competitor. He is now an excellent Secretary General and I know I leave you in capable hands while I am absent. Finally, I wish that all of our team members have an enjoyable and successful competition.

**Alan Allinson, President
International Young Physicists' Tournament**

Amirkabir University of Technology President's Message



Dear All,

Amirkabir University of Technology has been always known as one of the leading & pioneer universities in sciences, technologies, inventions, initiatives. It could be certainly said that today's honorable advancements of lovable Islamic Iran in energy and physics is also relied on helps, supports and valuable efforts of professors, scholars and researchers of this university. Holding the International Young Physicists' Tournament in level of students which is also accompanied with great welcome, provides valuable chance in this field for expressing geniuses and capabilities of talented youths of Islamic Iran and could have the message of brighter future in energy and physics fields.

I feel it is necessary to besides thanking all of the involved persons in holding this important scientific event, assistance and attention of supporters of this tournament, say welcome to all of the dear participants such as students, scholars, teachers, professors and Iranian and foreign supervisors. I wish that besides having a pleasant memory of presence in the Amirkabir University of Technology, the main goal of holding this great event - which is improving the level of scientific and practical knowledge of participants – will be properly achieved.

Alireza Rahaei, President
Amirkabir University of Technology
Executive Director, IYPT-2011

Dean of Faculty of Nuclear Engineering and Physics' Message



It is a great pleasure for me to be with you today and have the opportunity to speak to this young-Scientist audience. I welcome you young physicists to our faculty and I am sure you are going home after finishing this physics fight (PF) but all of you take with yourself some views of thousand years of Persian culture. On behalf of our faculty members, hoping during this week you show your talent and capabilities to our students, as well as the whole students all over

the world. As I believe physics is the whole nature and since 1000 years ago in my country some people used physics laws to use so called "renewable" energies. Lastly, I want to express my appreciation to all of you, the president of our university and my colleague who support this very well known international meeting.

Reza Amrollahi Professor
Dean, Faculty of Nuclear Engineering and Physics

Ariaian Young Innovative Minds Institute President's Message



Dear IYPT members, honorable guests, and young scientists

First of all on behalf of the Ariaian Young Innovative Minds Institute board members, it is my honor to welcome you all participants from around the world to the 24th IYPT. We all would like to celebrate this great international event in our country and will do everything to make it an unforgettable experience for everyone involved. Combination of the knowledge and experiments to motivate students is an important factor in active learning but to improve it in a high level we need a debating and asking in a cooperative atmosphere. IYPT is one these activities which has been succeeded to attract more students and teachers in physics. To gain more experience and confidence,

our students in Iran has been involved in IYPT since 2007 and the number of participants in our national tournaments, PYPT, is growing each year. It is very important to know that taking part in tournaments such as IYPT is not only a challenge but also is developing how to **SEE** your environment carefully, **THINK** about the phenomena happen around you and **SOLVE** the problems with your innovative minds. Finally I wish you all a good luck.

Dina Izadi

**Ariaian Young Innovative Minds Institute president
Head of IYPT 2011 Local Organizing Committee (LOC)**

Executive Director of IYPT-2011 Message



Honorable Ladies and Gentlemen

Iran historically, as an ancient nation, has played an outstanding role in organization, development and evolution of science and technology in particular in medicine. The Amirkabir University of Technology as the first technical university in Iran is the mother technological university and is the pioneer, among other things, in establishing the first Ph.D. program in science and technology at the Faculty of Physics. The “Iranian School of Health Physics” (ISHP) has been recently established for provision of professional training to radiation workers and radiation protection officers in the thematic safety areas of a national radiation protection infrastructure. The ISHP is indeed honored as its first international activity to be the Executive Office organizing the IYPT-2011. Having said the above, I believe that holding the IYPT-2011 in this university

is a good omen to ignite incentives and motives of young physicists from 23 countries to become the great future scholars in physics . It should be born in mind that the organization of such events in large cities like Tehran and in a university environment will not be without memorable difficulties; no matter how effective the organizers work. Finally, I like to welcome you to Iran and our university. Without your participation and supports, successful organization of this event in this university could not be possible. I like also to express my deep appreciation and gratitude to you for participation and support and deeply wish you all a high success with good memories of your stay and touring in this country.

**Mehdi Sohrabi, Professor, Executive Director, IYPT-2011
Amirkabir University of Technology**

Administration Committee Members, IYPT 2011

Name	Affiliation	Position & Title
Alireza Rahaee	Amirkabir University of Technology	Chair; Professor and President of the University
Reza Amrollahi	Amirkabir University of Technology	Professor and Dean of School of Nuclear Engineering
Dina Izadi	Ariaian Young Innovative Minds Institute (AYIMI)	AYIMI President and Head of LOC
Mehdi Sohrabi	Amirkabir University of Technology	Professor & Executive Director
Behrouz Arezou	Amirkabir University of Technology	Professor and Vice-President for Students' Affairs
Majid Kouh Khelil	Amirkabir University of Technology	Director of Official Affairs
Malek Naderi	Amirkabir University of Technology	Assistant Professor and Director General of Scientific Societies and Olympiads' Affairs
Mohammad Hassan Sebt	Amirkabir University of Technology	Professor and Vice-president for Post-graduate Studies
Ahmad Reza Rahimi Kelarijani	Amirkabir University of Technology	Professor and Vice- president for Cultural Activities
Zahra Bakhtiari	Amirkabir University of Technology	Director of Public Relations

LOC Members, IYPT 2011

Name	Affiliation
Mehdi Sohrabi	Amirkabir University of Technology
Malek Naderi	Amirkabir University of Technology
Massoud Torabi Azad	Ariaian Young Innovative Minds Institute (AYIMI)
Ramin Ziba Seresht	Ariaian Young Innovative Minds Institute (AYIMI)
Dina Izadi	Ariaian Young Innovative Minds Institute (AYIMI)
Aria Ashja Ardalan	Ariaian Young Innovative Minds Institute (AYIMI)
Dorna Izadipanah	Ariaian Young Innovative Minds Institute (AYIMI)
Zahra Bakhtiari	Amirkabir University of Technology
Jalal Izadi	Ariaian Young Innovative Minds Institute (AYIMI)
Rasool Saeedi	Amirkabir University of Technology
Zahra Zeinali	Amirkabir University of Technology
Nona Izadipanah	Ariaian Young Innovative Minds Institute (AYIMI)
Hasan Bagheri Valoujerdi	Ariaian Young Innovative Minds Institute (AYIMI)
Amir Nabi Bayati	Amirkabir University of Technology
Mohammad Reza Esfandiari	Amirkabir University of Technology
Shahrokh Aghaalizadeh	Amirkabir University of Technology
Ahmad Yazdani Vafadar	Amirkabir University of Technology

IOC Members

Country	Name
Austria	Thomas Lindner
Belarus	Ivan Antsipau
Brazil	Victor Fujii Ando.
Bulgaria	Assen Velichkov Kyuldjiev
China	Feng Song
Chinese Taipei	Hsien-chung Kao
Croatia	Kreso Zadro
Czech Republic	Stanislav Panoš
Georgia	George Laskhishvili
Germany	Rudolf Josef Lehn
Iran	Dina Izadi
Kenya	Francisco Swaminathan
Korea	Myeong Hoi Kwon
Mexico	Carmen Del Pilar Suarez Rodriguez
Poland	Andrzej Jerzy Nadolny
Russia	Valentin Ivanovich Lobyshev
Singapore	Theresa Poh Sin Thor
Slovakia	František Kundracik
Sweden	Mattias Andersson
Switzerland	Samuel Martin Byland
Thailand	Prapun Manyum
Ukraine	Valery Koleboshyn

IOC & EC Members

Chair of Executive Committee; Professor Reza Amrollahi, Iran

Country	Name	Position
Australia	Alan Allison	President
Slovakia	Martin Plesch	Secretary General
United Kingdom	John Balcombe	Treasurer
Iran	Dina Izadi Mehdi Sohrabi	IOC & EC Professor & Executive Director
Austria	Georg Hofferek	EC
Austria	Timotheus Hell	EC
China	ChuanYong Li	EC
Germany	Rudolf Lehn	IOC & EC

Participants

Country	Team Leader	Team Member
 Austria	Thomas Lindner Dieter Winkler	Martin Schnedlitz Katharina Ehrmann Daniel Freidorfer Tomas Kamencek Maximilian Ingo Lasserus
 Belarus	Ivan Antsipau Aliaksandr Mamoika	Anna Achapouskaya Evgeniy Gunko RyhorGunko Stanislav Krasulin (Captain) Julia Sapronova Mikita Kress(visitor)
 Brazil	Victor Fujii Ando	Mateus Braga de Carvalho Bárbara Cruvinel Santiago Julliana dos Santos Frassei Lucas Henrique Morais Danilo Moreira Simões Leonardodos Anjos Cunha(Visitor) Roberto Zarzur Frassei (Visitor)



Bulgaria

Dimitar Minchev Ribarov

Daniela Damyanova

Gergana Dimitrova Borisova
Momchil Emil Molnar (Captain)
Momchil Nikolaev Naydenov
Blagovesta Miroslavova Nikolaeva
Ivelin Yordanov Penchev
Nikola Ognyanov Karavasilev



China

Xuewei Cao

Qing Ye

Yu Cao
Yixuan Han
Weijia Kong
Siqi Zhao
Linyue Zhu

Chinese Taipei

Wahkeung Sze

Jong-Ching Wu

Chang-Wei Huang
Kai-Chieh Huang
Wei-Ting Lee
Sheng-Yi Lee
Han-Po Tseng



Croatia

Kreso Zadro
Veronika Sunko

Nives Bonacic (Captain)
Katja Kustura
Una Pale
Gabriela Clara Racz
Lara Vrbanec



Czech Republic

Jan Dirlbeck
Stanislav Panoš

Josef Hazi (Captain)
Pavel Jiroušek
Tereza Kroupová
Anh Vu Le Quy
Viet Luu Tran
Josef Hazi (visitor)



Georgia

Teimuraz Gachechiladze
George Laskhishvili

Alexander Barnaveli
Tornike Gogniashvili
Irakli Gudavadze
Tamari Karbelashvili
Tamar Nizharadze



Germany

Bjoern Arne Miksch
Florian Bruno Ostermaier

Lorenz Valentin Eberhardt
Felix Theodor Engelmann
Marc Forstenhaeusler
Michael Kern
Patrick Paluch
Marko Vucic (visitor)



Iran

Hamid Ghaednia
Reza Montazeri Namin

Hossein Azizi (captain)
Alireza Tahmasebzadeh
Parham Zendedel
Rojin Anbarafshan
Tahereh Azizpour Lindy



Kenya

Francisco Swaminathan
Winnie Devadoss Francisco

Azzam Hussein Ramji Jivraj
Paolo Alessandro Kravos
Nheel Rashesh Patel
Mayur Bhupesh Rana
Andrew Zhad Yang Wong



Korea

Chan Oung Park
Kwang Joo Kim





Hee Jae Jang
Kun Ho Kim
SangJae Lee
SungYeon Yang
GwangBin Bae
JunYoung Heo (visitor)



Mexico

Carmen Del Pilar Suarez Rudriguez

IOC/Juror

 <p>Pakistan</p>	<p>Farida Tahir</p>	<p>Observer</p>
 <p>Poland</p>	<p>Michal Oszmaniec</p>	<p>Grzegorz Fabiański Ryszard Maciej Błogowski Łukasz Gładczuk (Captain) Maciej Szymon Malinowski Stanisław Świdwiński</p>
 <p>Russia</p>	<p>Valentin Ivanovich Lobyshev Igor Dmitrievich Borodin</p>	<p>Maxim Dudin Sergey Alexey Krotov Olga Kozhikhova Vitaly Sapegin Nikita Shanin</p>
 <p>Singapore</p>	<p>Meng Tiong Alfred Loo Chye Hyat Mark Wee</p>	<p>Yan Qi Huan (Captain) Daniel Keat Kay Mark Shieu Ming Daryl Pay Juehang Qin Nuda Zhang Guoxian Tan(visitor)</p>



Slovakia

Matej Ftáčnik

Marcela Hrdá

Tomáš Kutaj
Tomáš Polakovič
Kamila Součková
Boris Vavrík
Matej Večerík (Captain)



Sweden

Per Ola Brantmark

Jakob Mattias Lavröd

Jenny Kristina Olsson
Marten Anders Holger Bertenstam
Fredrik Olof André Parnefjord Gustafsson
Ali Imad Raad



Switzerland

Samuel Martin Byland

Daniel Keller

Patrick Mario Lenggenhager (Captain)
Sara Moshfegh
Julia Corinna Larissa Glaus
Lydia Susanna Issler
Masako Monika Kaufmann



Thailand

Prapun Manyum

Narumon Suwonjandee

Parinthorn Kettubtim
Kotchakorn Khwamchareon (Captain)
Thanawat Summalertphant
Sutanont Surabotsopon
Donlawat Sutthai
Khanchai Khosonthongkee (visitor)
Worawat Meevasana(visitor)
Nirut Pussadee (visitor)
Kongnita Koeiniyom(visitor)



Ukraine

Pavlo Viktor

Valery Koleboshyn

Andrii Zadaianchuk
Ivan Ivanovich Koval
Oleksandr Sergeevich Zlatov
Yevgen Cherniavskyi

Curriculum Vitae of International Jury Members



Sweden

Univ. Prof. Dr. Anders Gunnar Tibell (Independent Juror)

Gunnar Tibell, Professor emeritus in Nuclear physics at Uppsala University. B.Sc. 1952 University of Alabama, USA, Ph.D. 1963, Uppsala University, Guest professor, University of Maryland 1971 - 72. research at CERN, totally 7 years from 1958 to 1979. President of Swedish Physical Society 1989 - 1995, Co-initiator of Division on Education in European Physical Society. President of the IYPT International Organizing Committee 1998 - 2008, President of IUPAP International Commission on Physics' Education 2002 - 2005, Board member of IAUTA (International

Association of Universities of the Third Age) 2006 - 2010. The 2010 EPS Gero Thomas Medal for outstanding service to the European Physical Society was awarded to Gunnar Tibell.



Austria

MSc. Dieter Winkler (Leader/ Juror)

Dieter Winkler, studied Physics, Sports and Informatics at the University of Graz. After having obtained the Master's degree, he started teaching at a

private high-school in Graz. Since the year 2005 he is holding various lectures including a teacher's trainee program at the University of Graz. In addition he is part of the Center of Physics Didactics in Styria. Dieter Winkler has been involved into AYPT and IYPT for more than five years. For him, the emphasis is not only on teaching but on coaching and challenging outstanding students in the course of an international tournament. In addition to his involvement at the IYPT he is a co-organizer of the Austrian EUSO (European Union Science Olympiad).



Austria

Christa Deinlein (Independent Juror)

Christa Deinlein, studied Mathematics at the University of Vienna and Physics at the Technical University of Vienna. Following her studies she began her work as a teacher in a high school. In addition to her conventional syllabus she also lectures two courses following the Montessori methodology. In

cooperation with the Institute of Didactics and Natural Sciences she also participated in the Evaluation of the latter methodology and its quality as well as its outcome. The project was named "Backstage Sciences". Following those projects, the participating students presented their newly acquired knowledge to their fellow students. Together with Brigitte Pagana Hammer, Christa Deinlein promoted, conducted and evaluated the CISCI project (Cinema in Science). From 2006 until 2007 she further occupied a position as a lecturer at the faculty of Physics at the University of Vienna.



Belarus

Ivan Antsipau (Leader/ Juror)

Ivan Antsipau, Research interests: Integration of Laboratory experiments, Research projects and Computer Science into advanced Physics high-school education; Machine Learning: Automatic Classification

and Categorization of documents and web-resources.
Education: 2012(expected): Belarusian State University, the Faculty of Radiophysics and Computer Technologies, major in Radiophysics and Computer Security. Teaching Experience: Physics Department, Lyceum of Belarusian State University 2007-currently: Young Physicists' Tournaments: Projects: coaching, training and advising teams ahead of Young Physicists' Tournaments (group meetings, laboratory



Brazil

MSc. Gilberto Júnior Jacob (Independent Juror)

Gilberto Júnior Jacob, Gilberto Júnior Jacob, 2002-2005 Masters in Physics, Campinas State University, Brazil , 1997-2001 Bachelor in Physics, Campinas State University, Brazil . TEACHING EXPERIENCE: Physics teacher at Colégio Objetivo – Privately held school. IYPT Brazil 2011 IYPT Brazil, São Paulo leader , 2010

experiments, theoretical discussions, additional theoretical lectures in fundamental physics) Advising in English for Physicists Teaching basics of Physical Modeling, Numerical Simulation and Computer Science. Physics Olympiads: Projects: teaching basics of Physical Experiment to high-school students . Work Experience: Teamleader for IYPT, Lyceum of BSU, 2007. NET Developer at "Soft Perspective", Minsk, Belarus 2008 – 2009.

IYPT Brazil, São Paulo leader . Brazilian Physics Olympiad: 1991 gold medal.



Brazil

MSc. Rawlinson Medeiros Ibiapina (Independent Juror)

Rawlinson Medeiros Ibiapina , Graduated in Physics at the Federal University of Piauí- Brazil (2001), Specializing in General Physics at the State University

of Piauí (2006) and Master in Physics of Matter Condensated at the Federal University of Piauí (2010). He is currently effective teacher of the Instituto Dom Barreto where he is also the Coordinator of Physics. Formal Education/Degree: 2008 – 2010 Master degree in Physics Piauí Federal University, UFPI, Brazil: Carlos Alberto Pereira da Silva. 1997 - 2001 Graduation in Physics. Piauí Federal University, UFPI, Brazil. 1994 – 1997 Professional/Technical Course in Electrotechnics. Federal Center of Technological Education.



Bulgaria

Dr. Assen Kyuldjiev (IOC/ Independent Juror)

Assen Kyuldjiev, 1976-1981 Physics Dept, Sofia University, Bulgaria. Specialization: Atomic Physics. Diploma Cum Laude. 11/1984{10/1986. Postgraduate Studies in SISSA, Trieste, Italy. Specialization: Elementary Particles Physics. I had estimated upper

bounds on the neutrino magnetic moments which had been listed as 'recommended' values by Particle Data Group for several years. Recently I get interested in a simple model characterized by the potential...IYPT Related Activities: I have been a member of all the Juries for the National YPT ever since it has been restarted in Bulgaria in 2000. In about half of the cases I have also been a Chairmen of the Jury. (In 1974 I participated in the International Physics Olympiad in Poland being a member of the Bulgarian National Team.).



Bulgaria

Dr. Dimitar Minchev Ribarov

Dimitar Minchev Ribarov, Desired employment: University "B. Konstantin Preslavski" – Shumen – Bulgaria, Occupational field: Education.. Work experience: From 1973, 11.18. Occupation or position held: Associated professor. Main activities

and responsibilities: Students training and science investigations. Type of business or sector: Teaching physics. Education and training: 1973 Ph D: 1996,. Title of qualification awarded: Ph.D. Principal Subjects/occupational skills covered: Crystal optics; Didactic of physics.



China

Dr. ChuanYong Li

ChuanYong Li , Education & Employment: 1980-1984, BS in physics, Nankai University, Tianjin, China, 1984-1987, MS in physics, Nankai University, Tianjin, China, 1987-1992, Lecturer in Biomedical Engineering, Tianjin Medical University, Tianjin, China, 1993-1997, PhD in Medical Physics, University of Tasmania, Hobart, Australia. 1997-present, faculty member in School of Physics, Nankai University. She is a professor in biophysics and vice-dean of the school. Her main

research field is biomedical signal processing and simulation.



China

Dr. Feng Song (IOC/ Independent Juror)

Feng Song , Ph.D., Tianjin University, 1995, M.S., University of Science & Technology of China Anhui Institute of Optics & Fine Mechanics, Academia Sinica, 1992, B.S., Hefei Polytechnic University, 1989. Professional Affiliation: 2005, 4-2007, 2 Program Director, Division of Optics & opto-electronics, Department of information Sciences , National Sciences China 2004, 11-2005, 3 Visiting Professor, the International Laser Center, Moscow University 2002, 12~present, Professor, Photonics Center, Nankai university 2001, 1~2002, 12, Research associate, College of Optical Sciences, University of Arizona,

1997,12~2001,1 Associate Professor, vice director,
College of Physics Sciences, Nankai University.



China

Dr. Xuewei Cao (Leader/ Juror)

Xuewei Cao, 1994-1998 Nankai University Department of Physics, B. S. P. R. China. 1998-2001 Nankai university School of physics M. S. P. R. China 2001-2004 Heidelberg University, Department of Physics and Astronomy, Ph. D, Germany 2004-now Nankai University, School of physics, Associate Professor



Chinese Taipei (Taiwan)

Dr. Wahkeung Sze (Leader/ Juror)

Wahkeung Sze, Place of Birth: Hongkong. EDUCATION: Final Degree: Ph. D., Dept. of Phys., Johns Hopkins Univ., U. S. A., 1988. First Degree: B. Sc., Dept. of Phys., Hong Kong Univ., Hongkong, 1982. Secondary Education: King's College, Hongkong, 1972–1979. ACADEMIC AFFILIATION: 1991–now: Associate Prof., Dept. of Phys., National Taiwan Normal Univ., Taiwan. 1989–1991: Postdoctoral fellow, Institute. of Phys., Academia Sinica, Taiwan.

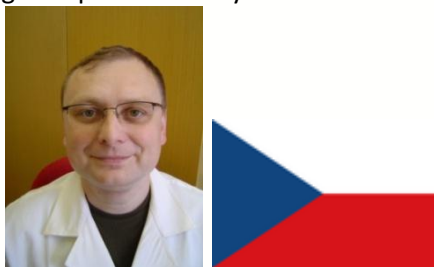


Croatia

Dr. Kreso Zadro (IOC/ Juror/ Leade)

Krešo Zadro, associate professor of physics at University of Zagreb, Zagreb, Croatia. He attended University of Zagreb for undergraduate and graduate study and received his Ph.D. in experimental solid state physics. His research area is magnetism (random magnets, magnetic phase transitions, nanomagnets). He has published over forty research papers in pear

reviewed journals. K.Zadro has taught a variety of undergraduate courses, primarily introductory physics. He has also been involved in several programs for gifted pre-university students.



Czech Republic

Dr. Stanislav Panos (IOC/ Leader/ Juror)

Stanislav Panos, born in Klatovy, Czech Republic. 1987-1991 grammar school in Klatovy . 1997 graduated from the Faculty of Mathematics and Physics, Charles University in Prague. Since 1997 Ph.D. study at the Department of Physics, Faculty of Education, University of Technology in Liberec (TUL). Since 1.10.2001 lecturer at the Department of Physics, Faculty of Education, TUL. 2003 PhD. degree in solid state. 2003 professor assistant at the Department of Physics, TUL. Since 2007 the member of Czech IYPT

committee. 2011 Head of Czech IYPT committee. Activity:- experimental study of the piezoelectric and dielectric properties of materials.- influence of hydrostatic pressure and temperature on piezoelectric response. - study of ferroelectric hysteresis loop. - computer controlled experiments.

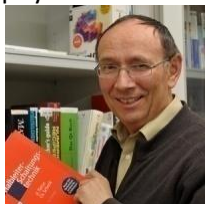


Georgia

George Lashkishvili (IOC/ Leader/ Juror)

George Lashkishvili, Current Employment: Scientific Center of Young Creators of Georgia, Union "Progress"- Director from 2003 till today. Summary of Professional Assets: - 1991-2003 - Ministry of Education of Georgia, Scientific Center of Young Creators of Georgia- Director. - 1978-1991 - Institute of Physiology – engineer; The same time teacher of physics in public school and Technical University. - 1973-1978 – State University Ionosphere laboratory

– engineer. Experience: 1992 till today – organizer of IYPT in Georgia. - 1996 – IYPT was held in Georgia – president. - From 1996 till today - member of IOC IYPT. - From 1998 till today - member of IOC ICYS. Formal Education: 1968-1973 – State University, faculty of physics.



Germany

MSc. Rudolf Lehn (IOC/Independent Juror)

Rudolf Lehn , 1970---1977 Universities Innsbruck/Austria and Ulm/Germany. 1975 University master as Grammar school teacher in Mathematics and Physics. 1977 Degree of Diplomphysiker“ Ulm University. Since 1978 Grammar school teacher for physics and mathematics at the Storck-Gymnasium in Bad Saulgau. Since 1992 Consultant for mathematics and physics in grammar schools. 2001-2004 Elected member of the “Vorstandsrat der Deutschen Physikalischen Gesellschaft” (Council of the German Physical Society). 1998 Teacher award of the

Helmholtz Association. 2003 Archimedes Prize for Physics of the German Science Teachers’ Association MNU. 2004 Georg---Kerschensteiner---Prize of the German Physical Society. 2005 Stauffer Medal of the Federal State of Baden---Württemberg. 2005 Klaus--von---Klitzing Prize by the University of Oldenburg. 2007 Order of Merit of the Federal Republic of Germany. 2008 Special Teacher Award by ThyssenKrupp. Since 2010 member of the Scientific Advisory Board, Stiftung Jugend forscht e.V.



Germany

Florian Bruno Ostermaier (Juror/Leader)

Florian Bruno Ostermaier, Bachelor’s degree in physics Ulm University. Winner of 21st IYPT 2008 Trogir/Croatia. Winner of Jugend forscht 2007 in Hamburg/Germany (most important nationwide Youth Science Competition) Winner of European Union Contest for Young Scientists 2007 in Valencia/Spain.



Kenya

MSc. Swaminathan Francisco (IOC/Juror/Leader)

Swaminathan Francisco, has been Participating in IYPT from 2003 and a member of the jury in Sweden, Australia, Switzerland, Slovakia, Korea, China and Austria. The chairman for the Jury members team in many Physics Fight and jury member of the finals in Swiss, Slovakia, Korea, China and Austria. He is a chartered Physicist from Institute of Physics, UK and a member of IoP, UK. **Education** : B.Sc. (Physics) , M.Sc. (Physics with a specialization in Electronics), B.Ed., Research Scholar and worked with the projects in Role of Ionosphere drift in Telecommunication, Crystallography, fibre optics, Multistage Amplifiers, Ultrasonic delay lines in binary mixtures and Innovative methodology in Physics Teaching. Having Physics teaching experience of over 30 years in

Engineering college and Cambridge High schools. He is currently working in the top International schools in Kenya.



Korea

Professor Kwang Joo Kim (Juror/Leader)

Kwang Joo Kim, Education (University/Degree): Yeonsei University /BA (1981). Iowa State University /MA, PhD USA. Work (Organization/Position: Professor (1993 -) Physics Department, Konkuk University, Seoul Korea. Major : Experimental Solid State Physics. IYPT Juror experience (When) : From 2005 (6 yrs experience).



Korea

Professor Hong Jung (Independent Juror)

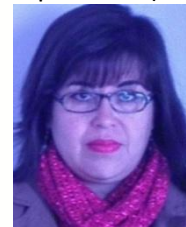
Hong Jung , Education (University/Degree): Seoul National University / BA (1983) University of Washington / MA, PhD USA. Work (Organization/Position: Professor (1985 -). Physics Department Sookmyung Women’s University Seoul Korea. Professor (1985 -) Physics Department Sookmyung Women’s University Seoul Korea. IYPT Juror experience (When): From 2005 (6 yrs experience). IYPT Juror experience (When) : From 2005 (6 yrs experience).



Korea

Professor Myeunghoi Kwon (IOC/Independent Juror)

Myeunghoi Kwon , Education (University/Degree): Sungkyunkwan University / BA (1979) Texas Tech University / MA, PhD USA. Work (Organization/Position: Professor (1990 -) Physics Department University of Incheon, Incheon Korea. Major : Experimental Solid State Physics. IYPT Juror experience (When) : From 2002 (9 yrs experience).



Mexico

Dr. Carmen del Pilar Suárez Rodríguez (IOC/Independent Juror)

Carmen del Pilar Suárez Rodríguez, has been a faculty member at Physics and Math Department at Universidad Autónoma de San Luis Potosi and Universidad del Valle de México Campus San Luis Potosi. She received his B.Sc. degree (1988) in physics from faculty of Science, UASLP., his M.A. degree (2004) in Metalurgic and Science Materials from Faculty of Engineer, UASLP, and her Ph.D. degree (2010) in Physics with Physics Education Specialty from the Research Center in applied science and advanced technology CICATA, National Politecnical Institute IPN. **EDUCATION:** Ph.D., Physics Education, CICATA, IPN, México D.F. M.A., Metallurgic and Science Materials, Faculty of Engineer. Universidad Autónoma de San Luis Potosí, SLP, México.2004. Físico (B.Sc. in Physics), , Faculty of Science, Universidad Autónoma de San Luis Potosí, SLP, México1988.



Pakistan

Dr. Farida Tahir (Independent Juror)

Farida Tahir, Nov2010-till date :COMSATS Institute of Information Technology, Islamabad, Associate Professor on Tenure Track. Jan 2007- June 2008 : Post-Doctoral Fellow, Department of Astronomy and Physics, University of Kansas, Lawrence, KS USA. Jun 2005- Jun 2008: COMSATS Institute of Information Technology , Islamabad, Assistant Professor, Sep 2003– Jun 2005 Foundation University, Rawalpindi, PK Assistant Professor 1992-1993: Quaid-i-Azam University, Islamabad, PK.Pre Doctoral fellow of World Laboratory Lusanne, Switzerland. 1988-199: Quaid-i-Azam University, Islamabad, PK Junior Research Associate. Honors and Awards: Sep-Oct 2010: Visiting scientist, CERN; Switzerland.Mar2008-May 2008 Post-Doctoral Fellowship, Department of

Astronomy and Physics, University of Kansas, Lawrence, KS USA. (Sponsor by KU, USA). Feb2007-Feb2008 International Post-Doctoral Fellowship, Department of Astronomy and Physics, University of Kansas, Lawrence, KS, USA.



Poland

Dr. ANDRZEJ NADOLNY (IOC/leader/Luror)

Andrzej Nadolny, graduated in physics at the University of Warsaw and obtained his doctor's degree (Ph.D.) at the Institute of Physics, Polish Academy of Sciences. The main topic of his scientific activity carried out at this institute and also at three universities in Germany (short stays in Clausthal, Marburg/Lahn and Duisburg) was semiconductor physics. He is author or co-author of many papers published in international scientific journals and invited speaker at several international conferences. In

1990 he initiated the national Young Physicists' Tournaments in Poland. In 2000-2006 he was the Secretary General of IYPT. He is member of the Advisory Board of the World Federation of Physics Competitions.



Russia

Dr. Valentin Ivanovich Lobyshev (IOC/Juror/Leader)

Valentin Ivanovich Lobyshev, Education and Degrees: Master Degree (Diplom) in Physics, Moscow State University (MSU), 1966. Ph.D. (Kandidat) in Physics, MSU, 1975. Doctor of Science (equiv. of German Habilitation) in Physics, MSU, 1988. Academic positions (all at Faculty of Phys. MSU): - engineer, junior scientist, scientist, senior scientist (up to 1989);- professor, head of Physics Dept. of Advanced Education and Science Center (AESC) of MSU and leading scientist at Faculty of Phys. MSU (1989-

present). Background: The number of publications is more than 150, including patent and one monograph, covering the field of physics, physical chemistry, biophysics and environmental. Teaching: Lectures for general physics and practice work at AESC (with secondary school students). Two lecture courses for university students and aspirants (postdocs) at Faculty of Physics. Guiding for diploma and PhD dissertations. Visits and lectures: Humboldt University. Berlin, 1988 Fudan University. Shanghai. China, 1988-1989 Comenius University. Bratislava. Slovakia, 1993 Stanford University. California. USA, 1999 Mahidol Wittayanusorn School. Salaya, Thailand, 2009



Singapore

Dr. Yeo Ye (Independent Juror)

Yeo Ye , past teaching experiences include teaching at Nanyang Polytechnic, Hwa Chong Junior College, and

the National Institute of Education. He obtained his PhD from the University of Cambridge, UK in 2004. Currently, he is a Senior Lecturer in the Department of Physics, National University of Singapore. The courses he has taught include Level 1000 Engineering Physics (Mechanics and Thermodynamics), Electricity and Magnetism, Level 2000 Quantum Mechanics, Electricity and Magnetism, Level 4000 Relativity, Level 500 Advanced Quantum Mechanics. Dr Yeo Ye serves as the Coordinator of Engineering Physics, and the Chairman of the Physics Department Outreach Committee. He is also a Council Member of the Institute of Physics, Singapore. His research interest is in theoretical physics, mainly the theory of quantum information and open quantum systems.



Singapore

Dr Loo Meng Tiong Alfred (Juror/Leader)

Loo Meng Tiong, Education: Postgraduate Diploma in Education (Sec) with Credit . National Institute of Education Singapore 2007 – 2008 . Master of Science in the Physical Sciences . The University of Chicago, Illinois, United States of America 2004 – 2005. Bachelor of Science (Physics with 1st Class Honors) Associate of the Royal College of Science Imperial College of Science, Technology and Medicine, United Kingdom 2001 – 2004 .Teaching experience: Lower Secondary Science and Upper Secondary Physics Teacher St Patrick's School, Singapore



Slovakia

Dr. Martin Plesch (EC/Independent Juror)

Martin Plesch, Work:2010:.Masaryk University Brno, Marie Currie fellow. 2009 – 2010 :University of Vienna, 6 months research stay. 2009 .FU SAV, Independent researcher position. 2007 – 2011 : FU SAV, Manager of the Institute. 2005 – 2009: RCQI, researcher. 2004 –

2010: Quniverse, NGO in Bratislava, statutory representative and researcher. 2001 – 2004: RCQI, PhD study.2001 – 2003 : Institute of Didactics of Physics FMFI UK, assistant professor. Education: 2005 Research Centre for Quantum Information (RCQI), Institute of Physics, Slovak Academy of Sciences (FU SAV), Bratislava, defence of thesis (PhD.). 2003 Faculty of Math, Physics and Informatics, Comenius University (FMFI UK) Bratislava, defence of doctoral thesis (RNDr.). 1996 – 2001 Department of theoretical physics FMFI UK, master study. 1999 – 2000 Innsbruck University, Austria, two semester study of theoretical physics. 1999 European Centre for Nuclear Research (CERN), Switzerland, study stay. 1998 Centre for Research of Heavy Ions (GSI), Germany, study stay. Other positions: 2009 – .Member of the PhD. scientific committee in Didactics of Physics, FMFI UK . 2008 – .Member of the Bc. scientific committee in Physics, FMFI UK. 2006 – .International Young Physicists' Tournament (IYPT), Secretary General.



Slovakia

Dr. František Kundracik (IOC/Independent Juror)

František Kundracik, The master study in experimental physics finished in 1984 on Faculty of Mathematics, Physics and Informatics, Comenius University, Slovakia. The PhD. study in quantum electronics and optics finished in 1996. From 2001 the position of associated professor in condensed matter physics on Department of Experimental Physics, Faculty of Mathematics, Physics and Informatics, Comenius University, Bratislava, Slovakia. Lecturer of Electricity and magnetism, Experimental data processing and Analog electronics. Research work in the field of electric properties of materials. Involved into Young Physicists' Tournament from 2001, in 2005-2007 a member of EC IYPT. Currently the head of Slovakian YPT.



Slovakia

Marcela Hrdá (Juror/Leader)

Marcela Hrdá, Bc. Marcela Hrdá is a master student of theoretical physics on the Comenius University in Bratislava. She finished her bachelor study last year. She is involved into IYPT for many years, formerly as a student, currently as a team leader.



Sweden

MSc. Per Brantmar(leader/ Juror)

Per Brantmar, Work experience:Year 2000-now Upper secondary math and physics teacher within Swedish national program and IB program. Education:

Year 1995-1999 Master of education Math and Physics, Lund University.



Sweden

Dr. Lars Gislén (Independent Juror)

Lars Gislén, born 19 September 1938 in Lund, Sweden. Studies in Physics, Mathematics and Theoretical Physics at Lund University, Sweden. Studies for Ph. D. at Laboratoire de Physique Theorique, Orsay, Université Paris, France. 1970-1971. Ph.D. 1972 in Theoretical Physics, Lund University, Sweden, 1972. Assistant professor and professor, Theoretical Physics, Lund University, Sweden 1965-2003. High School professor 1977-1990. Scientific publication on high energy particle physics (8). Scientific publication physics-medicine (1). Scientific publications on neural networks (3). Scientific publications on the optics of animal eyes (3). Scientific publications on atmospheric optics (divergent-light halos) (4). Scientific publications

on South East Asian astronomy and calendars (4). Several course books in physics (classical mechanics, classical electromagnetic theory, quantum mechanics, statistical physics, special theory of relativity, system theory, elementary particle theory, cosmology), and science. Didactic articles on physics (19). Delegation leader for the Swedish team for the International Physics Olympiad 1982-1999. Teacher and lecturer at the International Computer School in Pushchino, Soviet Union/Russia 1991-1994, 1998. Delegation leader for the Swedish team for IYPT in Groningen, Netherlands 1994.

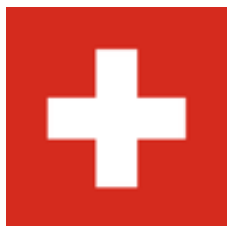


Sweden

MSc. Mattias Anderson (IOC/Independent Juror)

Mattias Anderson, Education: Master's degree in Physics from Lund University, 2000. Fil. Lic. Nuclear Physics from Lund University, 2005. Teacher

Qualification from Malmö University, 2007. Teaching Experience: I have been working as a teacher at upper secondary level (16-18) since 2007. During this time I have also been involved with the Swedish IYPT team.

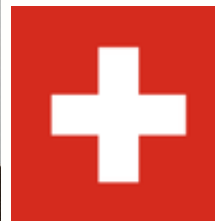


Switzerland

Dr. Ilya Martchenko (Independent Juror)

Ilya Martchenko, Research interests: -Experimental soft condensed matter, Investigation of its structural properties by optical, hydrodynamic methods, - Colloids, nanoparticles, complex fluids, polymer solutions, auto-assembly and liquid crystalline systems, surfactants, - foams, films, gels, porous materials, dendrimers, polyelectrolytes, micelles, vesicles, - DLS, DDLS, 3D DLS, SLS, TEM, SAXS, SANS, DWS, UV/VIS spectrometry, Kerr effect, flow birefringence, rheometry. Education: 2009+ PhD, University of Fribourg, Switzerland research area: soft

matter physics and nanoscience, focus on functionalized colloidal model systems with tunable size and interactions expected PhD thesis title: Physics of strongly interacting anisotropic particles. advisor: prof. Peter Schurtenberger. 2009 Master of Science (condensed matter physics), St Petersburg State University, Russia. M.Sc. thesis title: Electrooptical and dynamic properties of third-generation cylindrical dendrimers in solutions. Publications (soft matter physics) Journal articles and preprints: Hydrodynamic, optical and electrooptical properties of macromolecules of third-generation cylindrical dendrimers in chloroform and dichloroacetic acid Polymer Science Series A.



Switzerland

MSc. Samuel Byland (IOC/Juror/Leader)

Samuel Byland, 1991 – 1997: Studies in theoretical

physics and mathematics at universities Zurich and Lyon; master thesis in cosmology; master degree with distinction for exceptional results. 1997 – 2000: Studies in secondary and higher education at university of Zurich; equivalent of a master in secondary and higher education. 1998 – present : Physics teacher at MNG Rämibühl (grammar school specialized in mathematics and science); since 2006 head of the physics department. 2005 – present: Member of the physics committee of the Swiss association of mathematics and physics teachers (VSMP). 2003 – present: Member of Pro IYPT-CH, the organisation responsible for selecting and preparing the Swiss IYPT team; since 2011 president of Pro IYPT-CH. 2004/2005: Member of the LOC for the IYPT 2005 in Winterthur, Switzerland. 2008 – present: Initiator of the Swiss YPT, president of the LOC.



Thailand

Dr. Prapun Manyum(IOC/ Juror/Leader)

Prapun Manyum, Education :D.Phil. (Materials), University of Oxford (1995). M.Sc. (Nuclear Physics), University of Oxford (1991). B.Sc. (Physics), Chiangmai University (1989). Professional Experience: - Dean, Institute of Science, (October 2007 --- present). Suranaree University of Technology.- Member of Suranaree University of Technology Council (August 2005 --- Present)- Head, School of Physics (October 2003 --- September 2007) Institute of Science, Suranaree University of Technology -Acting head, School of Laser Technology and Photonics. (October 2003 --- September 2007). Institute of Science, Suranaree University of Technology - Associate Professor (October 2004 --- present) School of Physics, Suranaree University of Technology, Thailand - Assistant Professor (July 2001 --- October 2004). School of Physics, Suranaree University of Technology, Thailand - Lecturer (January 1987 --- July 2002).



Ukraine

Dr. Valery Koleboshyn (IOC/Juror/Leader)

Valery Koleboshyn, Doctor of Physical and mathematical science. Associate professor, Odessa National Mechnikov's university, vice-principal in Richelieu lyceum, Odessa. Object of the scientific interests: physics of nonequilibrium processes in disordered oxide structures. More than 100 scientific articles, 5 registered and patented inventions in physics of the small currents and sensor electronics. Innovative professional with 22 years of progressive experience within the Young Physicists Tournaments. Head of LOC of the 15 IYPT in Ukraine (2002), member of the IOC IYPT (since 2001). Head of Jury in Ukrainian YPT's (since 1994). Team leader of Ukrainian national team in IYPT's since 1992. Author of over 300 problems for Ukrainian and International YPT's.

Curriculum Vitae of Local Jury Members



Dr. Ahmad Gharib

Ahmad Gharib, Education Information: Ph.D: Physics (Nuclear Eng.). M.Sc.: Physics (Nuclear Eng.). University: AmirKabir University of Technology (Tehran Polytechnique). Date of Graduation: 1984. Teaching Experience (1994-2011) :Laser physics , Lasers spectroscopy , Nuclear Physic. Research Interest:Radiation , Nuclear energy , Theoretical physics , Detectors. Research Experience:Nuclear analytical techniques , Radiations.



Dr. Jamshid Soltani NabiPour

Jamshid Soltani NabiPour, EDUCATION: Ph.D., physics/Applied sciences, University Politehnica of Bucharest (UPB), Romania, 2010. M. Sc., Nuclear Engineering-Medical Radiation Engineering, Amirkabir University of Technology (Tehran Polytechnic), Tehran-Iran, 2001. EDUCATIONAL EXPERIENCE: Teaching basic physics, computer and mathematics to undergraduate students, Amirkabir University (Tafresh branch). Teaching computer sciences to undergraduate students in Azad University, Tehran-Iran. Teaching physics, mathematics to high school students. ADVISOR PROFESSOR OF FOLLOWING PROJECTS: Measuring the wear in piston rings by using thin layer activation and designing an experimental way to its determination. Design and construction of magnetic coil for bone healing equipment. EDITORIAL BOARD OF: Professional journal of Radiation Medical Engineering of Iran <http://www.partoha.ir>.



Dr. Javad Koohsorkhi

Javad Koohsorkhi, Assistant Professor, Faculty of New Science and Technology, University of Tehran, Tehran, Iran. EDUCATION: Ph.D (Electrical Engineering, Nano-electronics) University of Tehran, Iran, Feb. 2010. M.Sc. (Physics, Solid State Electronics) University of Tehran, Iran, 2002 to 2005. B.Sc. (Physics, Solid State Physics) Shahrood University of Technology, Iran, 1998 to 2002. RESEARCH INTERESTS: Carbon nanotube (CNT) based devices, displays, nanolithography and other applications of CNTs, Solar Cell, Nano scale devices: Physics and fabrication process, MEMS fabrication. TEACHING EXPERIENCES (2003-2011): Teaching, Physics II, Amirkabir University of Technology, 2010-2011. Teaching, Physics III, Amirkabir University of Technology, 2010-2011. Teaching, Solid State Physics II, Amirkabir University of Technology, 2010-2011... AWARDS: Medal and certificate of the best poster presentation at Iran

National Physics Annual Conference. Distinguished PhD Researcher, Faculty of Engineering, University of Tehran, 2007.



Dr. Massoud Torabi Azad

Massoud Torabi Azad, Education: 1990- B.Sc., Applied Physics,Iran. 1993 -M.Sc.,Physical Oceanography , Iran. 1999-Ph.D.,Physical Oceanography ,Iran .Professional Background: 1993-1999 Science Consultant of Environment Organization ,Department of Marine Environment. 1995-2002 Research Associate, Iranian Society of Marine Science &Technology. 1999-Associate Professor ,Azad University-North Tehran Branch ,Marine Science & Technology Faculty. 2000-2009 Associate Professor ,Tarbiat Modares University ,Natural Resource & Marine Science Faculty. Research: A. Area of Professional Expertise:Ocean Circulation & Currents ,Satellite Oceanography ,Numerical Modeling

of Large Scale & Mesoscale Processes in the Ocean, Interaction Between Sea and Air.



Dr. Mahmud Vahdat Roshan

Mahmud Vahdat Roshan, Research interest: Radiation measurements and applications, Fusion Researches. Academic Background: B.Sc (2000-Iran): Bushehr Institute of Technology, Materials Engineering, Title: Fusion Materials. PhD (2010-Singapore): Nanyang Technological University, Title: High energy ion beams from the plasma focus. PATENT Yttrium Fast Neutron Detector, US Patent, September 2, 2009, PTO s/n 12/538,138. TRAINING : School on Plasma Physics, Diagnostics and Plasma Related Applications, Kudowa Zdroj, Poland, June 23-27, 2003. Training Workshop on Atomic, Molecular Data for Fusion Energy Research, Trieste, Italy, Sept. 8-12, 2003. Fusion Energy-Plasma Physics, Diagnostics, Applications, June 7-13, 2004, Kudowa Zdroj, Poland International Workshop on

Plasma Diagnostics and Applications, July 2-3, 2009, Singapore. Summer College on Plasma Physics, August 10-28, 2009, Trieste, Italy.



Dr. Mehdi Khakian

Mehdi Khakian, Education Information: PostDoc: Physics, Sharif Univ. of Tech., Tehran, Iran. Ph.D: Physics, Sharif Univ. of Tech., Tehran, Iran. M.Sc.: physics Sharif Univ. of Tech., Tehran, Iran. University: AmirKabir University of Technology (Tehran Polytechnique). Date of Graduation: 2004. Research Interest: Astronomy, Cosmic Ray, High Energy Astrophysics, Cosmic Ray and Gamma Ray Physics. Teaching Experience (1998-2011) :Cosmic Ray and particle Physics (AUT)(Sep.2010 January 2011),Elementary Astronomy and Astrophysics (AUT)(Feb.2009 June 2009), Gen.Phys.I Lab. (CATC), (Feb.2001 , June2001), Instructor... Research Experience: Simulation of Extensive Air Showers by direct Programming (Pascal & Fortran). Simulation of

Extensive Air Showers by CORSIKA code and extended analysis of the simulated events.



Dr. Mehdi Jafari

Mehdi Jafari, Education: Ph.D in Physical Oceanography, Islamic Azad University (Sciences and Researches Branch), Tehran, Iran , 2004-2010. Thesis Title: Study on Seasonal Variation of Oceanic Mixed Layer in “Oman Sea” Using a Numerical Model. M.Sc in Marine Science (Physical oceanography), Tarbiat Modarres University (TMU), Tehran, Iran, September 2002- November 2004; Thesis Title: “Study on Seawall morphodynamical imp acts on adjacent beaches in southern coasts of Caspian Sea (Case study: Ports of Anzali, Nowshahr, Amirabad.



Dr. Mojtaba Shamsaie Zafarghandi

Mojtaba Shamsaie Zafarghandi, Education Information: Ph.D: PhD in atomic and nuclear radiation in Medicine and industry , Tehran, Iran, 1996. M.Sc.: Physics, University of Maine (U.S.A). University: AmirKabir University of Technology (Tehran Polytechnique). Date of Graduation: 1996. Research Interest: Radiation therapy . Neutron activation analysis . X ray fluorescence . Simulation for atomic and nuclear radiations. Radiation Imaging, Radiation shielding and Nuclear techniques in radiation measurements. Teaching Experience (1979-2011): Mechanics and heat, Electricity and Magnetism, Modern Physics, Waves and vibrations, Optics, Electromagnetism, Nuclear Physics, Medical Physics.... Research Experience: Radiation therapy, Neutron activation analysis, X ray fluorescence, Simulation for

atomic and nuclear radiations, Radiation Imaging, Radiation shielding and Nuclear techniques in radiation measurements. Number of Undergraduate students by research: 10. Number of M.sc students by research: 34 . Number of PhD students by research: 10. Journal paper publications: 10. Conference papers: 15.



Dr. Payman Nayebi

Payman Nayebi, Education Information: Ph.D: Condensed Matter and Nanotechnology. M.Sc.: physics (Solid State). University: AmirKabir University of Technology (Tehran Polytechnique). Date of Graduation: 2001. Research Interest: Nanostructure fabrication, Molecular Dynamic Simulation, MEMS & NEMS, Thin Film Formation. Teaching Experience (2001-Present): Teaching of Thermal & mechanic lab, AmirKabir University , Teaching of mechanic, Emam Ali

University, Teaching of Electromagnetic, Emam Ali University, Teaching Assistant of Quantum I, Amirkabir University. Research Experience: Designing and making of Ionized Cluster Beam Deposition (ICB) system Atomic Energy Organization, 1998-2000, Surface Acoustic Wave Device for gas sensing Meisami research center, 2000-2004. Optical Parametric Oscillator (OPO laser): ICFO, 2005.



Dr. Seyyed Mehdi Hosseini Jenab

Seyyed Mehdi Hosseini Jenab, Education: M.Sc. IN PLASMA PHYSICS September 2004 – February 2007 Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran. M.Sc Thesis Title: “Kinetic Simulation of Plasma in Magneto Static Approximation” STUDENT OF PH.D. IN PLASMA PHYSICS September 2007 – August 2011 (expected time) Amirkabir University of Technology (Tehran

Polytechnic), Tehran, Iran. Ph.D. Thesis Title: “Study and Simulation of Dust Particle effects on Propagation of Nonlinear Waves in Dusty Plasma” VISITING RESEARCHER September 2010 – May 2011 Queen’s University of Belfast, Northern Ireland, United Kingdom.



Dr. Shahyar Saramad

Shahyar Saramad, Education: Ph.D: Nuclear Science and Technology. M.Sc.: Electronics. University: Amirkabir University of Technology (Tehran Polytechnic). Date of Graduation: 2001. Research Interest: Surface study of nano-template anodic porous alumina, Advanced detectors by Artificial Neural Network, Molecular Dynamic Simulation, Two and three dimensional Modeling and characterizing thick Hydrogenated Amorphous Silicon detectors, Thin Film Formation. Teaching Experience: Physics I, Physics II, Electronics I, Nuclear Physics, Nuclear

Electronic. Research Experience: A supervisor of a M.S. thesis: Manufacturing ZnO nano piezoelectric (Poly-Technique University). Extracting the Parameters of Advanced detectors by Artificial Neural Network (Poly-Technique University). A supervisor of a M.S. thesis: Processing the signal of detectors by Artificial Neural Network (Poly-Technique University).



Dr. Shahram Motaghiani

Shahram Motaghiani, Education Information: Ph.D: Condensed Matter and Nanotechnology (Amirkabir University of Technology, 2007-). M.Sc.: Solid State (Amirkabir University of Technology, 2002). University: Amirkabir University of Technology (Tehran Polytechnique). Date of Graduation: 1993. Research Interest: Electronic Structure Computations, Charge Transport in Organic Materials, Photovoltaic Solar

Cells. Teaching Experience (2008-2011) : Teaching Assistant of Mechanics, International Branch of Amirkabir University, Fall 2008. Teaching Assistant of Quantum I and II, Amirkabir University, 2009-2010. Teaching of Mechanics, Amirkabir University, 2010-2011. Research Experience: Ab initio calculation of dynamic (hyper) polarizabilities for polydiacetylene. M.Sc. Thesis, Amirkabir University of Technology, 2000-2002. Simulation of Organometallic Polymeric Photovoltaic Solar Cells. Ph.D. Thesis, Amirkabir University of Technology, 2010- Now.



Dr. Zahra Rezaei (Ph.D)

Zahra Rezaei, Education Information: Ph.D: High Energy Physics (String theory). M.Sc.: Physics. University: Amirkabir University of Technology (Tehran Polytechnique). Date of Graduation: 2007. Research Interest: High Energy Physics (String theory). Teaching

Experience (2000-2011) :Physics I, Amirkabir University of Technology, from September 2010 to January 2011. Part time teaching of Physics and Mathematics of High school, 2000-2006. Research Experience: Effect of Different Recording and Reconstructing Wavelength in Visible Holography. Designing Beam Expander with optical software ZEMAX.



Farzin Safarzadeh Maleki (Ph.D)

Farzin Safarzadeh Maleki, Education Information:
Ph.D:High Energy physics, total grade point: 17.80 out of 20. M.Sc.: Theoretical physics and Quantum Field Theory. University: AmirKabir University of Technology (Tehran Polytechnique). Research Interest: Group works and studies, High Energy physics, String/Superstring Theory, Cosmology, Chaos.
Teaching Experience (2008-2010): 2008 – 2010/Semnan University, Shiraz/Teacher of physics. 2008-2010/ Islamic Azad University of

Semnan/Teacher of physics. 2000-2008/Peyvand Institute/Internal Manager. Research Experience: Supersymmetry in Quantum mechanics. Three Dimensional Vision in Optics.



Maryam Hosseinzadeh (Ph.D)

Maryam Hosseinzadeh, Academic Background 2008 Faculty of physics and Nuclear Engineering Tehran Polytechnic University, Tehran. PhD student Nuclear Engineering. 2005-2007 Faculty of Physics Tehran Polytechnic University Tehran. M.Sc. Degree Nuclear Engineering. Academic Honors 2006 Tehran Polytechnic University, Iran Named as Top student among Nuclear Engineering M.Sc. students. **Research activities:**
Theoretical studies on laser welding.Theoretical studies on Physics and instruments of MRI. Theoretical studies on different ways of analysis of material such

as PIXE. Study on synchrotron's lattice Design and Simulation. Design of lattice for acceleration of protons. The Physics of PET and its application. Study on beam optics such as Transverse and Longitudinal beam dynamic.



Maryam Zoghi (Ph.D)

Maryam Zoghi, Education Information: Ph.D: Medical radiation Engineering, Tehran, Iran. M.Sc.: Laser Physics, Amirkabir University of Technology, Tehran, Iran, 2005. University: AmirKabir University of Technology (Tehran Polytechnique). Research Interest: laser welding Theoretical studies on Physics and instruments of MRI. Synchrotron's lattice Design and Simulation . Physics of PET and its application. Teaching Experience (2008-2011) : Amirkabir University of Technology, Fundamental Physics I and II, fall 2010. News Department, Fundamental

Mathematics, spring 2009. University of Applied Science and Technology, Information Technology Department Physics, Electricity and Magnetism, fall 2008. Research Experience: Theoretical studies on laser welding, Theoretical studies on Physics and instruments of MRI. Theoretical studies on different ways of analysis of material such as PIXE.



Erfaneh Behjat (Ph.D)

Erfaneh Behjat, Education Information: Ph.D: field: Theoretical physics, branch: Plasma M.Sc.: field: Theoretical physics, branch: theoretical. University: AmirKabir University of Technology (Tehran Polytechnique) Research Interest: Interdisciplinary works and studies. Networks and Statistical physics application. Soft condense matter physics. Complex

Systems and Chaotic ones. Research Interest: Interdisciplinary works and studies. Networks and Statistical physics application. Soft condense matter physics. Complex Systems and Chaotic ones. Publications (selected): E.Behjat and N.Riaiz, "Topological solitons in DNA with modified potential", Iranian Journal of physics research, 2010.



Nafise Sharifi (Ph.D)

Nafise Sharifi, Education Information: Ph.D: Nanotechnology. M.Sc.: Physics. University: AmirKabir University of Technology (Tehran Polytechnique). Research Interest: Investigation of the effect of metallic nanoparticles' SPR on the efficiency of solar cell. Teaching Experience (2007-2011) :Teaching Assistant of General Physics Lab I (Fall 2007) Teaching Assistant of General Physics Lab II (Spring - Fall 2008-11. Research Experience: Simulation of the Movement of Two- Dimensional Gas Molecules vs. Temperature

The Growth of Silver Nanoparticles and Coating on Fibers and Surfaces. Investigation of the effect of metallic nanoparticles' SPR on the efficiency of solar cell.



Tayebe Naseri (Ph.D)

Tayebe Naseri , Education Information: Ph.D: Quantum Optics I,II , Quantum Computation, Nonlinear Fiber Optics, Photonic Crystal. M.Sc.: Quantum Optics. University: Sharif University Of Technology. Research Interest: bistability Analysis of semiconductor micro-ring lasers. Teaching Experience (2008-Present): Teaching Assistant physics Department, Sharif Univ. of Technology , Quantum mechanics I,II (undergraduate) , Assisted Professor AR.Bahrapour , Teaching Assistant physics Department, Sharif Univ. of Technology , Quantum mechanics (graduate), Assisted Professor A. Langari Research Experience: 2010- Present/SHARIF UNIVERSITY OF TECHNOLOGY/Angular Momentum of

Photon Long-distance quantum communication,Soliton. 2009-2010/SHARIF UNIVERSITY OF TECHNOLOGY/Optical Amplifiers (Raman Amplifier). 2008-2009/SHARIF UNIVERSITY OF TECHNOLOGY/Micro ring Lasers Statistical Analysis of Fiber-optic and Fiber sensors.

magnetic fields in IR-T1 Tokamak ,azad university journal of science and technology, science and research branch.



Maryam ghasemloo (Ph. D)

Maryam ghasemloo, Education Information: Ph.D: Atomic and molecular physics (hot plasma)-[continue now]. M.Sc.: Atomic and molecular physics(hot plasma). University: Islamic Azad University,science and research branch(plasma physics research center). Research Interest: Atomic and molecular physics(hot plasma). Teaching Experience (2008-2011): Basic Physics, Mechanic physics, Thermal physics Laboratory, Basic PhysicsLaboratory. Publications (selected): Accepted for publication:design and fabrication of mesh grid in tokamak for measurement of

Persian Young Physicists' Tournaments, PYPT

We should come to notice that there is no border among different sciences and students can learn chemistry, physics, biology... simultaneously but a key factor in successful learning is a learner's motivation. Substitution the traditional modes of teaching and learning physics with new one will promote active learning. Different national and international tournaments which are either valuable to students or educators will improve their skills. **Persian Young Physicists' Tournament, PYPT**, is one of the programs which Iran has involved since 2007. The PYPT Regulations is determined by IOC member of IYPT in Islamic Republic of Iran and any changes will be informed on PYPT website , [Http://www.pyptonline.com](http://www.pyptonline.com). PYPT Regulations is the same as IYPT but the PYPT team is composed of three secondary school students. Each team is accompanied by one team leader. Students challenge in three PFs

and the best three (four) having the highest **TSP** in the Selective PFs participate in the Final. Different schools such as **Aboureihan, Shahid Mahdavi, Mofid, Mesbah, Rahe Roshd** and some organizations like **Mashhad Carpet Co.**, have supported the national tournament, PYPT in previous years. Now students from different high schools in Iran are able to request entry into PYPT which is carried out in a period determined by the **PYPT Executive Committee (ECO)** . Two selected teams participate in IYPT and AYPT each year to get more experience in physics.

The 24th IYPT Time Schedule

July 22, 2011

Arrival, Preparation, Registrations, Free time

14:00-15:00	EC Meeting
17:00-20:30	Welcome Party
21:00	IOC & Jury Meeting

July 23, 2011

07:30- 8:30	Breakfast
8:30 -12:00	Opening ceremony, Draw
12:00- 14:00	Lunch
14:30	PF1
19:00-20:30	Dinner

July 24, 2011

06:30- 7:30	Breakfast
8:30 -11:30	PF2
12:00- 14:00	Lunch
15:00- 20:00	Tour with Packed supper

July 25, 2011

06:30- 7:30	Breakfast
8:30 -11:30	PF3
12:00- 14:00	Lunch
14:30	PF4

19:00-20:30 Dinner

July 26, 2011

06:30- 7:30	Breakfast
8:30 -11:30	PF5
12:00- 14:00	Lunch
15:00- 20:00	Tour with Packed supper

July 27, 2011

Tour

July 28, 2011

06:30- 7:30	Breakfast
8:30 -11:30	Final
12:00- 14:00	Lunch
14:00 – 16:00	Poster Presentation
16:00- 18:00	Closing Ceremony
19:30-21:00	Dinner

July 29 -31, 2011

Early Departures: for the teams who have not registered in the tournament tour,
IOC meeting

July 31, 2011

All Departures

Problems

1. Adhesive tape

Determine the force necessary to remove a piece of adhesive tape from a horizontal surface. Investigate the influence of relevant parameters.

2. Air drying

Table utensils (dishes, cutlery, etc.), after being washed, dry differently. Investigate how the time of drying depends on relevant parameters.

3. Bouncing flame

Place a flame (e.g. from a Bunsen burner) between two charged parallel metal plates. Investigate the motion of the flame.

4. Breaking spaghetti

Find the conditions under which dry spaghetti falling on a hard floor does not break.

5. Car

Build a model car powered by an engine using an elastic air-filled toy-balloon as the energy source. Determine how the distance travelled by the car depends on relevant parameters and maximize the efficiency of the car.

6. Convection

In a container filled with a liquid, heat transport will occur when the bottom of the container is heated and the top surface is cooled. How does the phenomenon change when the container rotates about its vertical axis?

7. Cup drum

A plastic cup is held upside-down and tapped on its base. Investigate the sound produced when the open end of the cup is above, on or below a water surface.

8. Domino amplifier

A row of dominoes falling in sequence after the first is displaced is a well known phenomenon. If a row of "dominoes" gradually increases in height, investigate how the energy transfer takes place and determine any limitations to the size of the dominoes.

9. Escaping powder

When a hot wire is plunged into a beaker of water with powder (e.g. lycopodium) floating on the surface, the powder moves rapidly. Investigate the parameters that alter the speed of movement of the powder.

10. Faraday heaping

When a container filled with small spheres (e.g. mustard seeds) is vibrated vertically with a frequency between 1 – 10 Hz, so called Faraday heaping occurs. Explore this phenomenon.

11. Fingerprints

Fill a glass with a liquid and hold it in your hands. If you look from above at the inner walls of the glass, you will notice that the only thing visible through the walls is a very bright and clear image of patterns on your fingertips. Study and explain this phenomenon.

12. Levitating spinner

A toy consists of a magnetic spinning top and a plate containing magnets (e.g. "Levitron"). The top may levitate above the magnetic plate. Under what conditions can one observe the phenomenon?

13. Light bulb

What is the ratio between the thermal energy and light energy emitted from a small electric bulb depending on the voltage applied to a bulb?

14. Moving cylinder

Place a sheet of paper on a horizontal table and put a cylindrical object (e.g. a pencil) on the paper. Pull the paper out. Observe and investigate the motion of the cylinder until it comes to rest.

15. Slow descent

Design and make a device, using one sheet of A4 80 gram per m² paper that will take the longest possible time to fall to the ground through a vertical distance

of 2.5m. A small amount of glue may be used. Investigate the influence of the relevant parameters.

16. Smoke stream

A glass jar is covered with cellophane. A tightly folded paper tube of length 4-5 cm is inserted hermetically into the jar through the cellophane cover. The tube is oriented horizontally. If one burns the outside end of the tube the dense smoke flows into the jar. Explore this phenomenon.

17. Vikings

According to a legend, Vikings were able to navigate in an ocean even during overcast (dull) weather using tourmaline crystals. Study how it is possible to navigate using a polarizing material. What is the accuracy of the method?

Regulations

I. International Young Physicists' Tournament

The International Young Physicists' Tournament (**IYPT**) is a competition among teams of secondary school students in their ability to solve complicated scientific problems, to present solutions to these problems in a convincing form and to defend them in scientific discussions, called Physics Fights (**PF**).

II. The problems of the IYPT

The 17 problems are formulated by the International Organizing Committee (**IOC**) and sent to the participating countries not later than in October. These problems may be used in any competition that could lead to selection of a national team. They may be used in International tournaments that involve foreign teams not taking part in IYPT.

III. The participants of the IYPT

1. The national teams

Any invited country, as well as the host country, is represented by one team. A country can only take part in the IYPT that has already taken part in the past or sent an observer in one of the last three years.

2. The membership of the teams

The IYPT team is composed of five secondary school students. The secondary school graduates could participate in the IYPT in the year of their graduation. The participation of university students is not allowed. The **LOC** may allow participation of teams of four or three students. The composition of the team cannot be changed during the Tournament. The team is headed by a captain who is the official representative of the team during the **PF**.

3. The team is accompanied by two team leaders.

IV. The Jury

The Jury is nominated and organized by the **LOC** in cooperation with **EC**. The Jury consists of at least five members, if possible from different countries. Team leaders, at least one from each team, are included in the Jury. The team leaders cannot be members of the Jury in the **PF** where their teams participate and should not, if possible, grade the same team more than twice.

V. The agenda of the IYPT

The IYPT is carried out in a period determined by the **LOC** (from May to July).

All teams participate in five Selective **PFs**. Selective **PFs** are carried out according to a fixed schedule as detailed in the attachment to these Regulations.

Numbers are ascribed to teams by lot. The best teams participate in the Final **PF**.

The host country provides a cultural program for the participants.

VI. The Physics Fight regulations

Three or four teams participate in a **PF**, depending on the total number of teams. In the course of a **PF** the members of a team communicate only with each other.

Before the beginning of a **PF**, the Jury and the teams are introduced.

The **PF** is carried out in three (or four) Stages. In each Stage, a team plays one of the three (four) roles: **Reporter, Opponent, Reviewer (Observer)**. In the subsequent Stages of the **PF**, the teams change their roles according to the schemes:

3 teams			
Team	Stage		
	1	2	3
1	Rep	Rev	Opp
2	Opp	Rep	Rev
3	Rev	Opp	Rep

4 teams				
Team	Stage			
	1	2	3	4
1	Rep	Obs	Rev	Opp
2	Opp	Rep	Obs	Rev
3	Rev	Opp	Rep	Obs
4	Obs	Rev	Opp	Rep

VII. The Stage regulations

The performance order in the Stage of a PF:	Reserved time in minutes
The Opponent challenges the Reporter for the problem	1
The Reporter accepts or rejects the challenge	1
Preparation of the Reporter	5
Presentation of the report	12
Questions of the Opponent to the Reporter and answers of the Reporter	2
Preparation of the Opponent	3

The Opponent takes the floor, maximum 5 and discussion between the Reporter and the Opponent	15
Questions of the Reviewer to the Reporter and the Opponent and answers to the questions Preparation of the Reviewer	2
The Reviewer takes the floor	4
Concluding remarks of the Reporter	2
Questions of the Jury	5

In the Final PF the procedure of challenge is omitted.
The official language of the IYPT is English.

VIII. The team performance in the Stages

The **Reporter** presents the essence of the solution to the problem, attracting the attention of the audience to the main physical ideas and conclusions.

The **Opponent** puts questions to the **Reporter** and criticizes the report, pointing to possible inaccuracy and errors in the understanding of the problem and in the solution. The **Opponent** analyses the advantages

and drawbacks of both the solution and the presentation of the **Reporter**. The discussion of the **Opponent** should not become a presentation of his/her own solution. In the discussion, the solution presented by the **Reporter** is discussed.

The **Reviewer** presents a short estimation of the presentations of Reporter and Opponent.

The **Observer** does not participate actively in the **PF**.

During one **PF** only one member of a team takes the floor as **Reporter**, **Opponent** or **Reviewer**; other members of the team are allowed to make brief remarks or to help with the presentation technically. No member of a team may take the floor more than twice during one Selective PF or, as Reporter, more than three times in total during all Selective **PFs**. During the Final **PF** any team member can take the floor only once.

The **LOC** must inform about the devices available for presentations not later than two months before the IYPT.

IX. The rules of problem-challenge and rejection

1. All problems presented in the same **PF** must be different.

2. Selective PF

The **Opponent** may challenge the **Reporter** on any problem with the exception for a problem that:

- a)** Was rejected by the Reporter earlier;
- b)** Was presented by the Reporter earlier;
- c)** Was opposed by the Opponent earlier;
- d)** Was presented by the Opponent earlier.

If there are less than five problems left to challenge, the bans **d), c), b), a)** are successively removed, in that order.

During the Selective **PFs** the Reporter may reject the challenge of three different problems in total without penalty. For every subsequent rejection the coefficient of the Reporter (see section **X**) is decreased by 0.2. This reduction continues to apply during the following selective **PFs**.

3. Final PF

Within four hours after the announcement of the results of the Selective **PFs** the teams participating in the Final choose their problems. In case teams choose the same problem, priority is given according to the order of presentation in the Final (see section **XII**). The choice should be made public immediately.

X. The grading

After each stage the Jury grades the teams, taking into account all presentations of the members of the team, questions and answers to the questions, and participation in the discussion. Each Jury member shows integer marks from 1 to 10. The mean of the highest and the lowest marks is counted as one mark which is then added to the remaining marks. This sum is used to calculate the mean mark for the team. The mean marks are multiplied by various coefficients: 3.0 or less (see section **IX**) for the Reporter, 2.0 for the Opponent, 1.0 for the Reviewer and then transformed into points.

XI. The resulting parameters

1. For a team in the PF

The sum of points (**SP**) is the sum of mean marks, multiplied by the corresponding coefficients and rounded to one decimal.

2. For a team in the Tournament

The total sum of points (**TSP**) equals the sum of **SP** of the team in all Selective PFs. The number of fights won (**FW**) is the number of Selective PFs, in which a team received the highest **SP** from all three or four teams participating in the same PFs.

XII. The Final

The three teams having the highest **TSP** in the Selective PFs participate in the Final. In case teams have equal **TSP**, their participation in the Final is decided by **FW**. If team(s) winning all their Selective PFs (**FW**=5) did not reach the Final by **TSP**, the best of them (determined by **TSP**) takes part in the final as fourth team.

The order of presentation in the Final is determined by position by entering the final: the higher the position, the lower the number in the scheme of section VI.

XIII. The final team ranking of the IYPT

Students in the top half (rounded up) of participating teams receive medals. The students of the team winning the Final are awarded the winners' cup. If two

or three teams have the same **SP** result in the Final, the winner is nominated according to the highest **TSP**, in case of equality by **FW**. All teams participating in the final are awarded 1st place certificates and gold medals. The five best teams not participating in the final are awarded 2nd place certificates and silver medals. 3rd place certificates and bronze medals are awarded to students in all other teams finishing in the top half. All other students receive certificates of participation. Team leaders obtain certificates indicating the ranking of their team.

XIV. The status of the regulations of the IYPT

The regulations are established by the **IOC** and may be changed only by the **IOC**.

Accepted in Tianjin, 29th July 2009



Amirkabir University of Technology (AUT)

The Amirkabir University of Technology is one of the oldest higher education technical and engineering institutes in Iran. Through the years and especially after the Islamic Revolution of Iran, the AUT has offered advanced and continuous services to the country and has contributed to many achievements in educational and research and development goals. The AUT started its activities since 1958 and over the time it expanded its size and the quality of educational services to the point that it is presently referred to as the "Iran's Mother Technological University". Having the 50 years of brilliant activities and experiences, the AUT has been able to acquire a leading role among the Iranian universities.

Some of the accomplishments of the AUT are:

- The first university in Iran where the first Ph.D. program in science and technology in particular in nuclear science and technology

was established with the highest number of M.Sc. and Ph.D, graduates in the country.

- Elevation to the status of the Center of Excellence in mechanical engineering, electrical engineering, chemical engineering, textile engineering, medical engineering, aeronautics engineering, civil engineering and computer and information technology engineering, and nuclear science and technology.
- Acquisition of the best award in national festivals such as the Khwaramzmi Festival and winning more than 20 awards in this festival and top student rankings in, national and international Olympiads
- Winning prestigious awards by elite and creative students in various international and national competitions such as Chemcar, Robotic, etc
- Being awarded the best research university among Iranian universities by the Ministry of Science, Research and Technology



Ariaian Young Innovative Minds Institute (AYIMI)

The Ariaian Young Innovative Minds Institute (AYIMI) was established based on more than 25 years experience in science education and different national and international scientific activities. The AYIMI is an institute to provide the young generations the opportunity to advance basic sciences such as physics, chemistry, mathematics, biology and so on in Iran as well as in many other countries in the world. In addition to AYIMI's membership in the World Federation of Physics Competitions (WFPhC), this institute represents a number of institutions for young innovative minds such as International Young Physicists' Tournament (IYPT), International Junior

Science Olympiad (IJSO), etc. The activities of the AYIMI also include organizing scientific meetings, workshops, tournaments, conferences, etc.

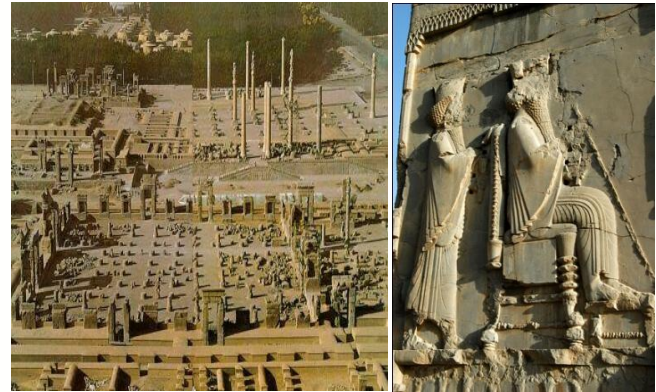
More details: <http://www.ayimi.org>

Some History of Iran

The Persian Empire proper begins in the Iron Age, following the influx of Iranian peoples which gave rise to the Median, Achaemenid, the Parthians, the Sassanid dynasties during classical antiquity. Iran is home to one of the world's oldest continuous major civilizations, with historical and urban settlements dating back to 4000 BC. The Achaemenid Empire (550–330 BC) was the first of the Iranian empires to rule in Middle East and central Asia. They were succeeded by the Seleucid Empire, Parthians and Sassanids which governed Iran for almost 1,000 years.

The earliest archaeological artifacts in Iran were found in the Kashafud and Ganj Par sites that date back to Lower Paleolithic. Mousterian Stone tools made by Neanderthal man have also been found. There are more cultural remains of Neanderthal man dating back to the Middle Paleolithic period, which mainly have been found in the Zagros region and fewer in central Iran at sites such as Shanidar, Kobeh, Kunji, Bisetun, Tamtama, Warwasi, and Yafteh Cave. Evidence for

Upper Paleolithic and Epipaleolithic periods are known mainly from the Zagros region in the caves of Kermanshah and Khoramabad and a few number of sites in the Alborz range and Central Iran. Achaemenid Empire (650 BC–330 BC), Parthian Empire (248 BC — AD 224), Sassanid Empire (224 – 651), were the foundation of Iran as a nation.





Isfahan

Geographical Position

The province of Isfahan covers an area of approximately 107,027 square kilometers and is situated in the center of Iran. To its north, stand the Markazi (Central) Province and the provinces of Qom and Semnan. In the south, it is within the limits of the provinces of Fars, Kohkiluyeh and Booyer Ahmad. Eastwards, it is in the neighborhood of the provinces of Khorassan and Yazd. Whereas, in the west it has common borders with the provinces of Lorestan and Chahar Mahal and Bakhtiari.



Climate

Isfahan province experiences a moderate and dry climate on the whole, ranging between 40.6° C (being

the maximum on a hot summers day), and the minimum being 10.6° C on a cold day in the winter season. The average annual temperature has been recorded as 16.7° C. and the annual rainfall on an average has been reported as 116.9 millimeters. The city of Isfahan experiences an excellent climate, with four distinct seasons that are apparent.

History and Culture

Historians have come to record Isfahan as a defense and military base. The security and protection of which was guaranteed by the increase of the number of castles, thereby, promoting the protection of the residents of the cities. These historical castles are Atashgah, Sarooyieh, Tabarok, Kohan Dej, Gard Dej etc. to name a few.

The great **Shah Abbas I** unified Persia, and with it created the grandeur of **Isfahan**. It even got the nickname *Nesf-e-Jahan*, meaning *Half the World*; to see Isfahan was to see half the world and no one leaves Isfahan without having marvelled at its architectural masterpieces. The highlights are **Imam Square**, with the mighty **Imam Mosque**, and the bridges crossing the *Zayandeh Rud* river.

Imam Square in **Isfahan** is one of the world's largest squares, and also ranks among the most beautiful. One can easily spend several days just exploring the square, as well as the two mosques, the palace and the bazaar surrounding the square.



Isfahan: Bridge of 33 Arches

Like many other of the great monuments of **Isfahan**, the **Si-o-Seh Pol** (meaning *Bridge of 33 Arches*) was built under the great *Shah Abbas I*. Under his rule, from 1587-1629, the Persian empire became one of the most powerful in the world. Abbas was the one who moved the capital from Qazvin to Isfahan, and changing the face of the new capital into becoming one of the most beautiful cities in the world. The Si-o-Seh Pol was built between 1599 and 1602.

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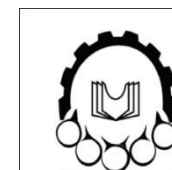
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