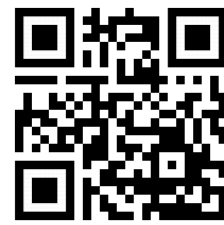


1928

K.N. Toosi University of Technology

2022

Faculty of Electrical
Engineering



In the name of God

Faculty of Electrical Engineering, K.N. Toosi University of Technology.

This booklet provides a brief introduction of the Faculty of Electrical Engineering, K.N. Toosi University of Technology, Tehran, Iran. It provides information on Undergraduate and post-graduate programs, research centers and laboratories, general resources and facilities, and a list of faculty members with their research interests and recent publications. This work has been designed and prepared by Miss Farzaneh Zarivar.

Office of research and technology

Faculty of Electrical Engineering (EE)

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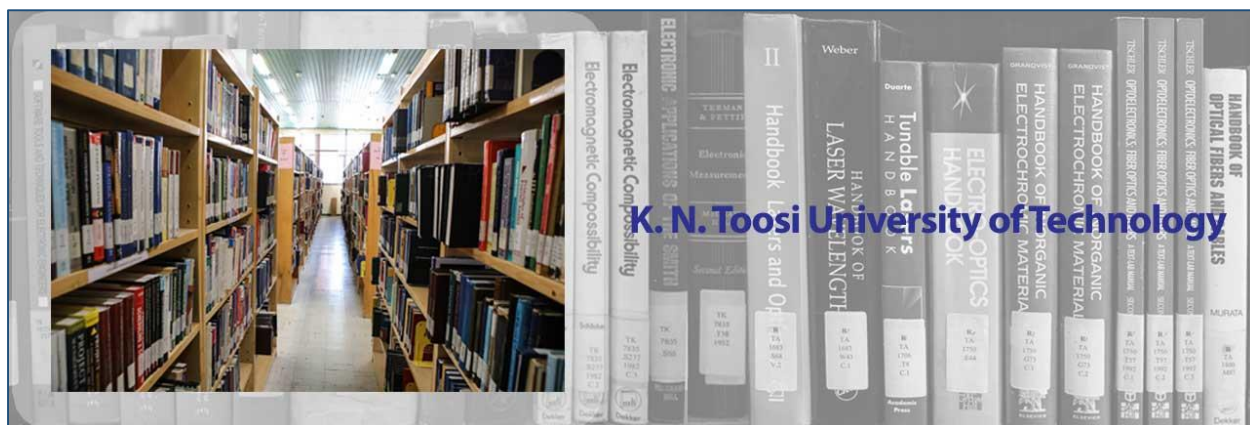
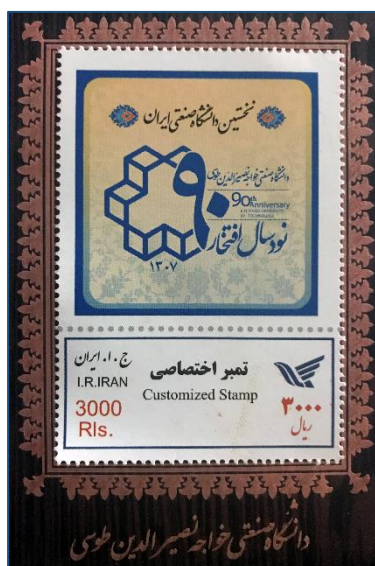


K.N. TOOSI UNIVERSITY OF TECHNOLOGY

Khajeh Nassir Toosi (K. N. Toosi) University of Technology is a public higher education institution located in Tehran, Iran. The university was founded and named the “Institute of communication” in 1928, hence its reputation as the oldest higher education institution across the country. K. N. Toosi University of technology complex is the result of a merger of eight other institutes in 1979. With more than 350 full-time faculty members and 7200 students, the university holds the first ranking among other universities due to its highest instructor-to-student ratio in Iran. The university is also known for its excellent track record of research activities and industrial projects. There are currently eleven faculties within the university, located in five different campuses across Tehran.

- ✚ Faculty of Electrical Engineering
- ✚ Faculty of Computer Engineering
- ✚ Faculty of Mechanical Engineering
- ✚ Faculty of Civil Engineering
- ✚ Faculty of Geodesy and Geomatic Engineering
- ✚ Faculty of Industrial Engineering
- ✚ Faculty of Aerospace Engineering
- ✚ Faculty of Material Science and Engineering
- ✚ Faculty of Mathematics
- ✚ Faculty of Physics
- ✚ Faculty of Chemistry

K.N. Toosi University of Technology excels in combining knowledge and experience in training of present and future experts of the country in Bachelors, Masters, and Ph.D. programs. The University is well-represented both in academia and in the industry due to the expertise and reputation of its faculty members, the quality of its students, its solid scientific background, and the invaluable technical experience of its alumni.





FACULTY OF ELECTRICAL ENGINEERING

Faculty of Electrical Engineering is the first academic foundation of K.N. Toosi University of Technology, established in 1928. During its 90+ years of academic activity, the Faculty has had the honor of training many successful experts and executives, highly-reputed academic professionals, and highly-respected intellectuals of the country.

Faculty of Electrical Engineering offers Bachelors, Masters, and Ph.D. degree programs and is comprised of the following six academic departments.

- Department of Biomedical Engineering,
- Department of Communications,
- Department of Electrical Power Systems,
- Department of Electronics,
- Department of Mechatronics (administered jointly by the Faculty of Mechanical Eng.),
- Department of Systems and Control.

Faculty of Electrical Engineering of K.N. Toosi University of Technology is proud of its graduates' competence in theoretical subjects as well as their hands-on-experiments, hence its top ranking among the nationwide universities.



PART I: Departments

Department of Biomedical Engineering

The Department of Biomedical Engineering's first Master's and Ph.D students in the field of Bioelectrics were admitted in 2001 and 2007, respectively. Research activities of this department are inherently inter-disciplinary, necessitating collaboration between professionals in engineering, medicine, and biology. In particular, international scientific and research collaborations are among the noteworthy features of this department. An example of this is the joint Ph.D. and M.Sc. dual-degree program in collaboration with the Medical School of the University of Picardie Jules Verne, France.

Core Research Areas

- Machine Vision and Medical Image Processing Lab (MVMIP)
- Bioelectronic Circuits Lab
- Biological Signal Processing Lab
- Clinical Studies Lab
- Speech and Sound Processing Lab (SSPL)
- Bio-Signal Recording

Research Laboratories

- Bioelectric Artificial Organs Laboratory
- Biomedical Measurement Laboratory
- Machine Vision and Medical Image Processing Laboratory (MVMIP)
- General Clinical Lab
- Speech and Sound Processing Lab





Hamid Abrishami Moghaddam, Ph.D.

Professor

Phone No: +98 21 84062229

Email: moghaddam@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/moghaddam>



Education:

Ph.D.: Biomedical Engineering, Universit de Technologie de Compigne (UTC), France, 1998.

DEA : Biomedical Engineering, UTC, France, 1994.

M.Sc.: Biomedical Engineering, Sharif University of Technology, Tehran, Iran, 1992.

B.Sc.: Electrical Engineering, Amirkabir University of Technology, Tehran, Iran, 1989.

Research Interest:

- Machine Vision
- Pattern Recognition
- Image Processing

Biography:

Born in Iran in 1964, Hamid Abrishami Moghaddam received his B.Sc. degree in electrical engineering from Amirkabir University of Technology, Tehran, Iran, in 1988. He then obtained his M.Sc. degree from Sharif University of Technology, Tehran, in 1991, followed by his Ph.D. degree from the Université de Technologie de Compiègne, France, in 1998, both in biomedical engineering. Since 2004, he has been collaborating with the GRMFC laboratory, Université de Picardie Jules Verne, Amiens, France, as an Invited Researcher of Medical Image Processing. He is currently a Professor of biomedical engineering at K.N. Toosi University of Technology, Tehran. His research interests include pattern recognition, image processing, and machine vision, of which he has published more than 150 articles in scientific journals and conferences. Dr. Abrishami Moghaddam chaired the Machine Vision and Image Processing (MVIP2003) conference in Iran in 2003. He is a member of the editorial board of the Iranian Journal of Biomedical Engineering and Iranian Journal of Machine Vision and Image Processing and is one of the founders of the Iranian Society of Machine Vision and Image Processing and the Iranian Society for Non-destructive Testing.



Ali Khadem, Ph.D.

Assistant Professor

Phone No: +98 21 84062402

Email: alikhadem@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/alikhadem>



Engineering (Bioelectric), University of Tehran, Tehran, Iran, 2014.

M.Sc.: Biomedical Engineering (Bioelectric), University of Tehran, Tehran, Iran, 2008.

B.Sc.: Electrical Engineering (Control), University of Tehran, Tehran, Iran, 2005.

Research Interest:

- Functional imaging
- Functional brain mapping (fMRI, fNIRS, EEG/MEG, ...)
- Computational neuroscience
- Applications of ultrasound in medicine

Biography:

Born in Tehran, Iran, in 1982, Ali Khadem received his B.Sc. degree in electrical engineering (Control) and his M.S. and Ph.D. degrees in biomedical engineering (Bioelectric)) from the University of Tehran, Tehran, Iran, in 2005, 2008, and 2014, respectively. In September 2013, he joined the Department of Electrical Engineering of Imam Khomeini International University, Qazvin, Iran, as an invited lecturer. He served under the title of Assistant Professor from February 2015 until February 2016. Since February 2016, he has been appointed to the Department of Biomedical Engineering, Faculty of electrical engineering, K. N. Toosi University of Technology, Tehran, Iran, as an Assistant Professor. He is the leader of “Functional Imaging and Human Brain Mapping” research trust and a member of “Medical devices” research cluster of CREATECH research and innovation center, K. N. Toosi University of Technology. His current research interests include medical image and signal processing focusing on functional imaging, functional brain mapping (fMRI, fNIRS, EEG/MEG, ...), computational neuroscience, and applications of ultrasound in medicine.


Maryam Mohebbi, Ph.D.

Associate Professor

Phone No: +98 21 84062240

Email: m.mohebbi@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/m.mohebbi>


Education:

Ph.D.: Biomedical Engineering, Bioelectric, Tarbiat Modares University, Tehran, Iran, 2012.

M.Sc.: Biomedical Engineering, Bioelectric, K. N. Toosi University of Technology, Tehran, Iran, 2007.

B.Sc.: Biomedical Engineering, Bioelectric, Shahed University, Tehran, Iran, 2003.

Research Interest:

- Biomedical signal processing
- Nonlinear analysis of ECG and HRV signals
- Modeling of cardiac activity
- Computational neuroscience

Biography:

Maryam Mohebbi was born in Tehran, Iran, in 1981. She received her Ph.D. degree in biomedical engineering, from Tarbiat Modares University, in 2011. She is currently appointed to the Department of Electrical Engineering, K. N. Toosi University of Technology as an Assistant Professor. Her research interests include biomedical signal processing, nonlinear analysis of HRV and ECG signals, model-based ECG processing, and EEG signal analysis, and computational neuroscience.


Mansour Vali, Ph.D.

Assistant Professor

Phone No: +98 21 84062418

Email: mansour.vali@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/vali>


Education:

Ph.D.: Biomedical Engineering, Amirkabir University of Technology, Tehran, Iran, 2006.

M.Sc.: Electrical Engineering, Sharif University of Technology, Tehran, Iran, 2000.

B.Sc.: Electrical Engineering, Esfahan University of Technology, Isfahan, Iran, 1998.

Research Interest:

- Speech Processing
- Sound Processing in Medical Assessment
- Medical Data Processing
- Artificial Neural Networks

Biography:

Mansour Vali was born in 1973 in Esfahan, Iran. He received his B.Sc. degree in Electrical Engineering from the Isfahan University of Technology in 1997, and then his M.Sc. degree in Bioelectric Engineering from the Sharif University of Technology in 2000. He obtained his Ph.D. degree in Biomedical Engineering from Amirkabir University of Technology, Tehran, Iran, in 2006. He then joined the University of Isfahan as a faculty member of the Biomedical Engineering group and held the position for a year. From 2007 to 2012, he became a faculty member of the Biomedical Engineering group of Shahed University, and then in February 2013, he joined KNTU. Dr. Vali is currently an Assistant Professor in Biomedical Engineering group of the aforementioned university. His research on sound and speech processing in medical and psychological assessments have resulted in the presentation of a new course at the Electrical Engineering Department of K.N. Toosi University for supplementary students of Dr. Vali himself. He's also been working on Big Data processing in medical applications since 2017, while trying to progress its advantages among physicians and hospital managers.

Department of Communications

Department of Communications is the most precedent educational core of both the Faculty of Electrical Engineering and the K.N. Toosi University of Technology itself. The department's activities revolve around traditional communications, optical communications, and telecommunication circuits and systems.

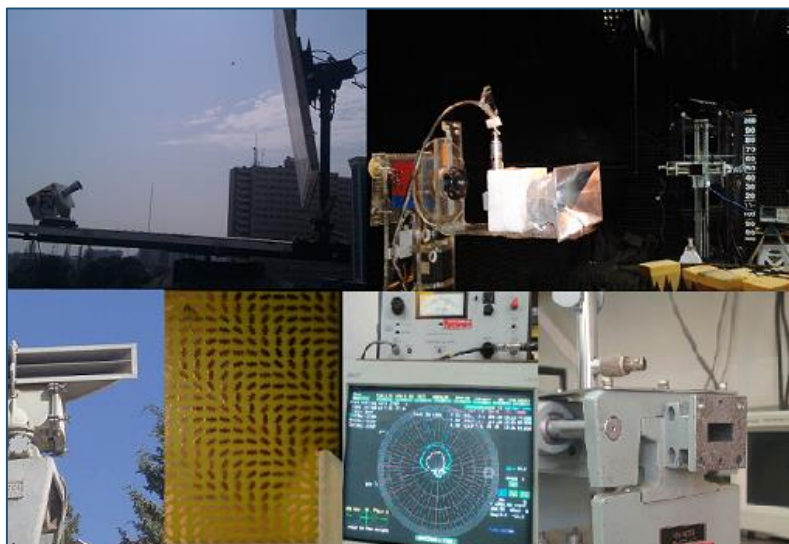
Undoubtedly, faculty members and alumni of this department play a significant role in the development of communications and telecommunications science and technology in Iran, national universities, higher education institutes in addition to telecommunications industries.

Core Research Areas

- Electromagnetic Waves Analysis and Simulation
- Information Theory, Coding, and Secure Communications
- Wireless and Mobile Communications
- Optics and Plasmonics, Materials, Effects, and Devices
- Antennas and Microwave
- Digital Signal Processing
- RF and Microwave Circuits
- Radar Systems

Research Laboratories

- Broadband Wireless Communication and Signal Processing Laboratory
- Coding and Cryptography Laboratory
- Communication Systems Laboratory
- Optical Communications and Nano-optics Laboratory
- Radar Advanced Technologies Laboratory
- Electromagnetic Simulation Laboratory
- Wireless Terminals Quality Control Laboratory



**Mohammad Sadegh Abrishamian, Ph.D.***Professor**Phone No: +98 2184062220**Email: msabrish@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/msabrish>***Education:**

Ph.D.: university of california, Irvine, Irvine-california, USA, 1980 and University of Bradford, Bradford, UK, 1996.

MSc.: Northrop University, Inglewood-California, USA, 1978.

BSc.: High Institute of Telecommunication, Tehran, Iran, 1970.

Biography:

M. Sadegh Abrishamian received his B.Sc. degree from the High Institute of Telecommunication, Iran; He then pursued his M.S. degree in Northrop University, Inglewood, CA, and his Ph.D. degree in Bradford University, Bradford, UK, all in Electrical Engineering. He is currently working as a Professor in the Department of Electrical Engineering of KNTU, Tehran, Iran. His research activities revolve around mathematical modeling of wave phenomena, computational electromagnetics (CEM), especially the FDTD method; scattering of EM waves; and periodicity in electromagnetics (Photonic, Plasmonic, Frequency Selective Surface (FSS), Double Negative Materials (DNG)).

**Arash Ahmadi, Ph.D.***Associate Professor**Phone No: +98 21 84062270**Email: gahmadi@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/arahmadi>***Education:**

Ph.D.: Sharif University of Technology, Tehran, Iran, 2009.

M.Sc.: Sharif University of Technology, Tehran, Iran, 2003.

B.Sc.: K.N. Toosi University of Technology, Tehran, Iran, 2000.

Research Interest:

- Radio frequency circuits and systems
- Passive and active microwave circuits

Biography:

Arash Ahmadi received his B.Sc. degree in communication engineering from K. N. Toosi University of Technology, Tehran, Iran, in 2000. He then pursued his M.Sc. and Ph.D studies in the same field at the Sharif University of Technology in 2003 and 2009, respectively. He is currently an assistant professor at K. N. Toosi University of Technology.

**Mahmoud Ahmadian, Ph.D.***Professor**Phone No: [+98 2184062350](tel:+982184062350)**Email: mahmoud@kntu.ac.ir**Personal website: http://wp.kntu.ac.ir/m_ahmadian***Education:**

Ph.D.: Digital Communication Systems, University of Manchester, Manchester, U.K., 1997.

M.Sc.: Electrical Engineering, University of Tehran, Iran, 1977.

Research Interest:

- Error control coding
- Secure communications
- Cryptography

Biography:

Mahmoud Ahmadian-Attaris is a Professor at the Department of Electrical Engineering, K. N. Toosi University of Technology, Iran. He received his M.Sc. degree in Electrical Engineering from the University of Tehran, Iran, in 1977, followed by his Ph.D. degree in Digital Communication Systems obtained from the University of Manchester. His research interests include coding theory and cryptography.

**Bahareh Akhbari, Ph.D.***Assistant Professor**Phone No: +98 21 84062315**Email: akhbari@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/akhbari>***Education:**

Ph.D.: Telecommunications, Electrical Engineering Department, Sharif University of Technology, Tehran, Iran, 2011.

M.Sc.: Telecommunications, Electrical Engineering Department, Sharif University of Technology, Tehran, Iran, 2005.

B.Sc.: Telecommunications, Electrical Engineering Department, Sharif University of Technology, Tehran, Iran, 2003.

Research Interest:

- Network Information Theory
- Information-theoretic security
- Secure Communications and cryptography
- Wireless Communications

Biography:

Bahareh Akhbari received her B.Sc., M.Sc., and Ph.D. degrees from Sharif University of Technology (SUT), Tehran, Iran in 2003, 2005, and 2011, respectively, all of which were in the field of Electrical Engineering. She was also a visiting Ph.D. student at the University of Minnesota for one year, starting in 2010. Since 2012, she has been an Assistant Professor of the Faculty of Electrical Engineering, K. N. Toosi University of Technology (KNTU), Tehran, Iran. Her research interests include network information theory, information-theoretic security, communication theory, and cryptography.


Hadi Aliakbarian, Ph.D.

Assistant Professor

Phone No: +98 21 84062303

Email: aliakbarian@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/aliakbarian>


Education:

Ph.D.: Telecommunications from the Katholieke Universiteit Leuven (KU Leuven), 2013.

M.Sc.: Electrical and Telecommunication Engineering from University of Tehran, Tehran, Iran, 2005.

B.Sc.: Electrical and Telecommunication Engineering from University of Tehran, Tehran, Iran, 2002.

Research Interest:

- Applied Electromagnetics (Agriculture, Health, ...)
- Antennas Arrays, (Digital) Beam Forming, Beam Shaping
- Electrically Small Antennas, Satellite Antennas
- EMC, Shielding

Biography:

Hadi Aliakbarian has served as an Assistant Professor at K.N. Toosi University of Technology of Iran since 2013. He received his B.Sc. and M.Sc. degrees in Electrical and Telecommunication Engineering from the University of Tehran in 2002 and 2005 respectively. He then pursued his Ph.D. studies in Electrical Engineering at Katholieke Universiteit Leuven (KU Leuven) in 2013. Dr. Aliakbarian was appointed to the Microwave Laboratory and the Center of Excellence of the University of Tehran as an Associated Researcher from 2005 to 2007, during which he worked on applied electromagnetics. He has also been an IEEE senior member since 2015.


Mehrdad Ardebilipour, Ph.D.

Associate Professor

Phone No: +98 21 84062372

Email: mehrdad@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/mehrdad>


Education:

Ph.D.: Electrical Engineering, University of Surrey, Guildford, Surrey, UK, 2001.

M.Sc.: Electrical Engineering, University of Tarbiat Modares Tehran, Iran, 1988.

B.Sc.: Telecommunications, Faculty of Electrical Engineering K.N. Toosi University of Technology, Tehran, Iran, 1977.

Research Interest:

- Wireless Broadband communications
- Advanced communications
- Relay Networks
- Cognitive Radio
- Mobile Communications
- Spread Spectrum Communications

Biography:

Born in Iran, Babol, Mehrdad Ardebilipour received his B.Sc. and M.Sc degrees in electrical engineering from K. N. Toosi University of Technology, Tehran, Iran, and Tarbiat Modarres University, Tehran, Iran in 1977 and 1989, respectively. He has also been awarded the degree of Ph.D by the University of Surrey, Guilford, England, in 2001. Dr. Ardebilipour has been an academic board member at K. N. Toosi University of technology since 2001. He was the director of the Communication Engineering Department and the head of Spread Spectrum and Wireless Communications research laboratory during 2006-2011. Dr. Ardebilipour has co-authored more than 100 refereed journal and conference papers. His current research interests are 5G, massive MIMO, relay networks, cognitive radio, wireless communications, advanced communications, and spread spectrum.

**Lotfollah Beygi, Ph.D.***Assistant Professor**Phone No: +98 21 84062416**Email: Beygi@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/beygi>***Education:**

Ph.D.: Electrical Engineering- Communication Systems, Chalmers University of Technology, Sweden, 2013.

M.Sc.: Electrical Engineering- Communication Systems, University of Tehran, Iran, 2002.

B.Sc.: Electrical Engineering-Electronics, University of Tehran, Iran, 1999.

Research Interest:

- Optical networking
- Statistical signal processing
- Digital communications
- Channel modeling
- Coded modulation
- Optical communications

Biography:

Lotfollah Beygi received his Ph.D. degree from Chalmers University of Technology, Sweden, in 2013. He was appointed to the Qamcom Research & Technology AB as an experienced signal processing developer and to the Ericsson AB as an R&D researcher from 2013 to 2015. He is currently working with the Communications Division of Electrical Engineering Department of K.N. Toosi University as an assistant professor. His main research interests include optical networking, statistical signal processing, digital communications, channel modeling, coded modulation, and optical communications.

**Ali Habibi Bastami, Ph.D.***Assistant Professor**Phone No: +98 21 84062204**Email: bastami@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/bastami>***Education:**

Ph.D.: Electrical Engineering, University of Tehran, Tehran, Iran, 2011.

M.Sc.: Electrical Engineering, Amir-Kabir University of Technology, Tehran, Iran, 2006.

B.Sc.: Electrical Engineering, Iran University of Science and Technology, Tehran, Iran, 2003.

Research Interest:

- Wireless Communications
- Cooperative Communications
- Cognitive Radio
- Multiple Input Multiple Output (MIMO) Systems and Space-Time Coding

Biography:

Ali H. Bastami received his B.Sc. degree from the University of Science and Technology, Tehran, Iran, in 2003, his M.Sc. degree (Hons.) from Amirkabir University of Technology, Tehran, in 2006, and his Ph.D. degree from the University of Tehran, Tehran, in 2011, all in electrical engineering. Since 2012, he has been an Assistant Professor appointed to the Department of Electrical and Computer Engineering of K. N. Toosi University of Technology, Tehran. His current research interests include cooperative communications, cognitive radio networks, and multiple-input multiple-output communication systems. He has received the Best Thesis Award from the Department of Electrical and Computer Engineering of the University of Tehran in 2011.



Zahra Ghattan Kashani, Ph.D.

Assistant Professor

Phone No: +98 21 84062313

Email: z.ghatan@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/z.ghatan>



Education:

Ph.D.: Electrical Engineering, University of Tehran, Iran, 2009.

M.Sc.: Electrical Engineering, University of Tehran, Iran, 2003.

B.Sc.: Electrical Engineering, University of Tehran, Iran, 2001.

Research Interest:

- Active Microwave Circuits
- Terahertz Systems and Nonlinear Frequency Conversion
- Terahertz and Millimeter-Wave Components
- Millimeter Wave Imaging/THz Imaging
- Photonic Crystals and Integrated Optics
- Nonlinear Optics

Biography:

Dr. Zahra Ghattan Kashani received her B.Sc., M.Sc., and Ph.D. degrees from the University of Tehran, Iran, all in electrical engineering in 2001, 2003, and 2009 respectively. From 2011 to 2013, she worked with Iran Telecommunication Research Center, Tehran, Iran, on high-frequency circuits. Since 2014, she has been an Assistant Professor appointed to the Electrical Engineering Department of K. N. Toosi University of Technology (KNTU), Tehran, Iran. Her primary research interests include computational electromagnetics for mm-wave/THz engineering and photonics.


Nosrat Granpayeh, Ph.D.

Professor

Phone No: +98 21 84062311

Email: granpayeh@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/granpayeh>


Education:

Ph.D.: Telecommunications, School of Electrical Engineering, University of New South Wales, Sydney 2052, Australia, 1996.

M.Sc.: Telecommunications, School of radio and Television, Tehran, Iran, 1980.

B.Sc.: Telecommunications, Faculty of Electrical Engineering, K. N. Toosi University of Technology, Tehran, Iran, 1975.

Research Interest:

- Optical Communications
- Photonics
- Optical and Photonic Devices, Effects, and Materials

Biography:

Nosrat Granpayeh received his B.Sc, M.Sc, and PhD degrees in telecommunication engineering from Telecommunication College, Tehran, Iran, in 1975, Radio and Television College, Tehran, Iran, in 1980, and University of NSW, Sydney Australia, in 1996, respectively. In 1975, he was employed as an Instructor at KNTU (formerly Telecommunication College) due to his status as an honor graduate of the Faculty of Electrical and Computer Engineering of the university. He was later promoted to Lecturer, Assistant Professor, Associate Professor, and Professor in 1980, 1996, 2007, and 2016 respectively. His research interests include optical devices' equipment and materials and optical fibers and their effects. He is the author and co-author of 160 journals and conference papers collectively. Professor Granpayeh is a member of OSA (Optical Society of America), OPSI (Optics and Photonics Society of Iran), and ISEE (Iran Society of Engineering Education). He is also a senior member of IEEE and the Chair of the Professional Activities Committee of IEEE Iran Section.


Somayeh Chamani, Ph.D.

Assistant Professor

Phone No: +98 21 84062326

Email: chamaani@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/chamaani>


Education:

Ph.D.: Electrical Engineering, Wave Communication, K.N. Toosi University of Technology, Tehran, Iran, 2011.

M.Sc.: Electrical Engineering, Wave Communication, K.N. Toosi University of Technology, Tehran, Iran, 2006.

B.Sc.: Electrical Engineering, Communication, Sharif University of Technology, Tehran, Iran, 2004.

Research Interest:

- UWB Radar
- UWB Microwave Imaging
- Real Time Locating System
- Time Domain Electromagnetics
- Body Area Network Communication
- Ultra-wideband Antennas
- Array Antennas

Biography:

Somayyeh Chamaani received her B.Sc. degree from the Sharif University of Technology in 2004, and her M.S. and Ph.D. degrees from K. N. Toosi University of Technology in 2006 and 2011, respectively, all in electrical engineering. She joined K. N. Toosi University of Technology in 2011 as an Assistant Professor of Electrical Engineering. Her research group focuses on UWB radar, UWB imaging, UWB localization, and UWB antennas. Body area applications, including localized hyperthermia using phased array antennas, in-body to off-body channel modeling and communications, and wearable antennas are also among her interests.

**Seyed Abdollah Mirtaheeri, Ph.D.***Associate Professor**Phone No: +98 21 84062426**Email: mirtaheeri@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/mirtaheeri>***Education:**

Ph.D.: Telecommunication, Tokyo Institute of Technology, Tokyo, 1991.

M.Sc.: Electrical Engineering, UCLA, USA, 1978.

B.Sc.: Communication, Telecom College, Tehran, Iran, 1971.

Research Interest:

- EMC and Electromagnetic Wave Absorber
- UWB Antennas
- Filters
- Time domain Electromagnetics antennas

Biography:

Born in Tehran, Iran, in 1949, Seyed Abdullah Mirtaheeri received his B.Sc. degree in communication engineering from the Telecom College, Tehran, in 1971. He obtained his M.Sc. degree in electrical engineering from UCLA in 1978, and then his Ph.D. degree from the Tokyo Institute of Technology in 1991. After obtaining his master's degree, he joined the Department of Electrical Engineering of K. N. Toosi University of Technology, Tehran, Iran. He started his research in EM wave absorbers in 1988 at Tokyo Institute of Technology. His current research interests include time domain electromagnetics, antennas, and EMC especially with broadband and thin EM wave absorbers.



Kamal Mohamed-pour, Ph.D.

Professor

Phone No: +98 21 84062427

Email: kmpour@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/kmpour>



Education:

Ph.D.: Electrical Engineering, University of Manchester, Manchester, U.K., 1996.

M.Sc.: Electrical Engineering, University of Tarbiat Modares, Tehran, Iran, 1987.

B.Sc.: Electrical Engineering, Telecommunication College (PTT), 1979.

Research Interest:

- Radar systems
- Wireless and mobile communications
- Information technology

Biography:

Kamal Mohamed-pour received his B.Sc. in electrical engineering from Telecommunication College (PTT) in 1979. He received his M.Sc. Degree in electrical engineering and Communication Systems from the University of Tarbiat Modares in 1987, and pursued his Ph.D. studies in the same field in the U.K, where he obtained his Ph.D. Degree from the University of Manchester, 1996. He is now appointed to the Department of Electrical Engineering of K. N. Toosi University of Technology, Tehran, Iran as a full professor in telecommunication. His main research interests are broadband wireless and mobile communication, radar systems, MIMO and OFDM, and digital signal processing.


Tavakkol Pakizeh, Ph.D.

Associate Professor

Phone No: +98 21 84062409

Email: t.pakizeh@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/pakizeh>


Education:

Post-Doctorate: Applied-physics (Bionano photonics) Chalmers University of Technology, Gothenburg, Sweden, 2009.

Ph.D.: Electrical Eng. (Telecomm.), K.N. Toosi University of Technology, Tehran, Iran. Visiting: Chalmers University of Technology, Gothenburg, Sweden, 2006.

M.Sc.: Electrical Eng. (Telecomm.) Iran University of Science and Technology, Tehran, Iran, 2001.

B.Sc.: Electrical Engineering, Telecommunication college (PTT), 1991.

Research Interest:

- Complex electrodynamics and optical Media
- Radio and optical telecomm, photonic networks
- Nano-optics, photonics, nanoplasmonics
- Microwave and optical components
- Nano-antennas

Biography:

Born in Iran, 1977, Tavakol Pakizeh received his Ph.D. degree in electrical engineering-telecommunication (fields and waves) from KNTU in 2006. He is currently serving as a Professor in electrical engineering-telecommunications at the KNTU. He worked with the Nanobiophotonics Division of the Department of Applied Physics of the Chalmers University of Technology, Gothenburg, Sweden, as a visiting Ph.D. student and Postdoctoral associate researcher from 2005 to 2009. His current research interests include electrodynamics of complex media, plasmonics, optical activity, nanooptics, and nanoantennas.


Ramezan Ali Sadegh-zadeh, Ph.D.

Professor

Phone No: +98 21 84062407

Email: sadeghz@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/sadeghz>


Education:

Ph.D.: University of Bradford, UK, 1990.

M.Sc.: Digital Communications Engineering from the University of Bradford and UMIST (University of Manchester Institute of Science and Technology) UK as a joint program, 1987.

B.Sc.: Telecommunications Engineering from the K.N. Toosi, University of Technology, Tehran, Iran, 1984.

Research Interest:

- Antennas & Propagation
- Computational Electromagnetic
- Radio Links
- Radar

Biography:

Professor R.A. Sadegh-zadeh is a full professor of communications engineering of the faculty of Electrical Engineering of K.N. Toosi University of Technology. He received his B.Sc. in telecommunications engineering from KNTU in 1984. He obtained his M.Sc. degree in digital communications engineering from the joint program of the University of Bradford and UMIST (University of Manchester Institute of Science and Technology), UK, in 1987. Sadegh-zadeh then pursued his Ph.D. studies in electromagnetic and antenna at the University of Bradford, the UK, in 1990. From 1990 till 1997, his activities as a Post-Doctoral Research assistant revolved around propagation, electromagnetic, antenna, Bio-Medical, and wireless communications. From 1984 to 1985, he worked with the Telecommunication Company of Iran (TCI), focusing on networking. He has been appointed to the Telecommunications Department of the Faculty of Electrical Engineering of K.N. Toosi University of Technology since 1997. He has published more than 200 referable papers in international journals and conferences, in addition to 10 technical textbooks. Professor Sadegh-zadeh's current interests are numerical techniques in electromagnetic, antenna, propagation, radio networks, wireless communications, nano-antennas, and radar systems.

**Mohammad Ali Sebt, Ph.D.***Associate Professor**Phone No: +98 21 84062109**Email: sebt@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/sebt>***Education:**

Ph.D.: Electrical Engineering - Communication Systems, Sharif University of Tech., Tehran, Iran, 2011.

M.Sc.: Electrical Engineering - Communication Systems, Sharif University of Tech., Tehran, Iran, 2007.

B.Sc.: Electrical Engineering - Communication Systems, Sharif University of Tech., Tehran, Iran, 2005.

Research Interest:

- Statistical Signal Processing
- Radar signal Processing
- Seismic Data Analysis
- SAR

Biography:

Born in Iran, Mohammad Ali Sebt received his B.Sc., M.Sc., and Ph.D. degrees all in electrical engineering, from Sharif University of Technology, Tehran, Iran, in 2005, 2007, and 2011, respectively. He has been a faculty member of the Department of Electrical Engineering of K. N. Toosi University of Technology, Tehran, Iran, since 2011. His main research interests are radar signal processing, detection and estimation theory, and array signal processing.

Department of Electrical Power Systems

An advanced, safe, and stable electric industry is one of the key requirements of the industrial development of a country. The Department of Electrical Power Systems of the Faculty of Electrical Engineering is well-reputed in teaching and researching various branches of electric power generation, transmission, dispatching, and electric machinery. The reputation of the faculty members, students, and alumni of the department stems from their quality academic research and their efforts in solving practical challenges of the electrical industries of the country.

Professional activities of the Department of Electrical Power Systems are conducted in two major areas: power systems, and electrical machinery and power electronics.

Core Research Areas

- Power Systems Dynamics
- High Voltage and Insulation
- Power Electronics and Electrical Drives
- Power Quality and Flexible Power Systems
- Advanced Power System Operation and Control
- Analysis and Design of Electrical Machines
- Electrical Power Distribution Systems
- Hybrid and Electrical Vehicles
- Smart Grids

Research Laboratories

- Electrical Machines and vehicles laboratory
- Management of Electric Energy and Distribution Systems Laboratory
- Electric Power Quality and Power Control Laboratory
- Advanced Motion Control & Power Electronic Research Laboratory
- High Voltage Laboratory




Karim Abbaszadeh, Ph.D.

Professor

Phone No: +98 21 84062324

Email: abbaszadeh@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/abbaszadeh>


Education:

Ph.D.: Electronic Engineering, AmirKabir University of Technology, Tehran, Iran, 2003.

M.Sc.: Electronic Engineering, AmirKabir University of Technology, Tehran, Iran, 1997.

B.Sc.: Computer Engineering, K. N Toosi University of Technology, Tehran, Iran, 1994.

Research Interest:

- Power Electronics including Dc-Dc, Ac-Ac, Dc-Ac and resonant Converter
- Electric and Hybrid Electric Vehicles traction motor drives
- Power converters for electric machines including inverters
- Novel electric machines for different applications
- Condition monitoring and fault diagnosis of electric machinery
- Auxiliary power generators
- Sensorless electric motor drive

Biography:

Karim Abbas-zadeh received his B.Sc. degree in communication engineering from K.N. Toosi university of Technology, Tehran, in 1991. He then obtained his M.Sc. and Ph.D. degrees in electrical engineering from AmirKabir University of Technology, Tehran, Iran, in 1997 and 2000, respectively. From 2001 to 2003, he served as a Research Assistant at the Electrical Engineering Department of Texas A&M University, College Station. He is currently appointed to the Electrical Engineering Department of K. N. Toosi University of Technology as a Professor. His research interests include power electronic and Dc-Dc & Dc-Ac converter, electric machinery, variable-speed drives, and propulsion applications. Dr. Abbas-zadeh is the author of more than 50 published journal papers. He is actively involved in presenting extensive courses and acts a consultant to various industries.


Asghar Akbari Azirani, Ph.D.

Professor

Phone No: +98 21 84062173

Email: akbari@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/akbari>


Education:

Ph.D.: Electrical Engineering, Tarbiat Modarres University, Tehran, Iran, 1998.

M.Sc.: Electrical Engineering, Amirkabir University of Technology, Tehran, Iran, 1991.

B.Sc.: Electrical Engineering, Tehran University, Tehran, Iran, 1988.

Research Interest:

- High Voltage
- Electrical Insulation and dielectrics
- Monitoring and Diagnostic of high voltage apparatus
- Partial Discharges
- Modeling and computer application in power systems

Biography:

Born in 1962 in Iran, Asghar Akbari received his B.Sc degree in 1988 from Tehran University, his M.Sc degree in 1991 from Amirkabir University, and PhD degree in 1998 from Tarbiat Modarres University, Tehran, Iran, all in electrical engineering. Since 1998 he has served as a Lecturer and a member of the academic staff of K. N. Toosi University of Technology, Tehran, Iran. From April 2000 to February 2002, he worked as a guest scientist (postdoctoral fellow of the Alexander von Humboldt Foundation of Germany) for Schering Institute of High Voltage Techniques and Engineering at Leibniz University of Hanover, Germany. His main research interests are monitoring and diagnostics of high-voltage apparatus, partial discharges, modeling, and computer applications in power systems. He is currently a guest scientist at Leibniz Universität Hannover, Germany, and an Associate Professor for high-voltage engineering and power systems at K. N. Toosi University of Technology, Tehran, Iran.



Turaj Amraee, Ph.D.

Associate Professor

Phone No: +98 21 84062298

Email: amraee@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/amraee>



Education:

Ph.D.: Sharif University of Technology, Iran-Grenoble INP University, France, 2009.

M.Sc.: Sharif University of Technology, Tehran, Iran, 2004.

B.Sc.: Shahid Beheshti University, Tehran, Iran, 2002.

Research Interests:

- Smart Grids: (Wide Area Control and Protection, Micro Grids)
- Power System Dynamic: Stability and Control
- Estimation, Identification and Fault Diagnosis
- Power System Operation and Planning

Biography:

Turaj Amraee received his Ph.D. degree in power system engineering from the Sharif University of Technology, Tehran, Iran, and Grenoble Institute of Technology, Grenoble, France, in 2011. He is currently an Associate Professor of the Electrical Engineering Department of K. N. Toosi University of Technology, Tehran, Iran. Dr. Amraee has been a Senior Member of IEEE since 2016 and is the director of Power System Security Laboratory of Electrical Engineering, K. N. Toosi University of Technology. He has conducted projects on the Iranian national grid under the collaboration of K.N. Toosi University of Technology and the Ministry of Energy. His research interests are smart grids, power system dynamics, operation, and planning.

**Mohammad Ardebili, Ph.D.***Professor**Phone No: +98 21 84062312**Email: ardebili@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/ardebili>***Education:**

Ph.D.: Electrical machines, University of Cardiff, UK, 1990.

M.Sc.: Electrical engineering, University of Tabriz, Iran, 1975.

B.Sc.: Electrical engineering, University of Tabriz, Iran,

Research Interest:

- Design, modeling and Manufacturing of Electrical Machines
- Design and Simulation of PMSM for Low-speed Direct Drive Application
- Design and simulation of Axial Flux PM-Generators for Direct Drive coupled wind Turbine
- Magnetic Materials

Biography:

Mohammad Ardebili received his M.Sc. degree from the University of Tabriz, Iran, in 1976, and his Ph.D. degree from the University of Wales, Cardiff, U.K., in 1991, both in electrical engineering. He is currently an Associate Professor and Head of the Electrical Machines and Drives Laboratory of the Electrical Engineering Department of K. N. Toosi University of Technology, Tehran, Iran. His research interests include electrical machines and drives, magnetic materials, design and modeling of PM machines, and wind generators.

**Ramin Alipour-Sarabi, Ph.D.***Associate Professor**Phone No: +98 21 84062450-306**Email: r.alipour@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/alipour>***Education**

Ph.D.: Electrical Engineering from Iran University of Science and Technology (IUST), Tehran, Iran, 2012.

M.Sc.: Sharif University of Technology, Tehran, Iran, 2014.

B.Sc.: Sharif University of Technology, Tehran, Iran, 2020.

Research Interest:

- Design, Modeling and Manufacturing of Electrical Machines,
- Condition Monitoring and Fault Diagnosis of Electric Machinery,
- Electrical Machines in Conventional and Electrical Vehicles (EVs),
- Electromagnetic Sensors, Micro Motors, Magnetic Materials,
- Electronic Converters Used in Electrical Machines.

Biography:

Ramin Alipour Sarabi received his B.Sc. degree in electrical engineering from Iran University of Science and Technology, Tehran, Iran, in 2012. He obtained his M.Sc. and Ph.D. degrees in electrical engineering from Sharif University of Technology, Tehran, in 2014 and 2020, respectively. He is currently an Assistant Professor appointed to the Department of Electrical Engineering of KNTU. Dr. Alipour is the author of multiple papers in international journals and conferences and works with large industries. His research interests include power electronics and design, optimization, and performance analysis of electrical machines and electromagnetic sensors.



Sadegh Mohsenzade, Ph.D.

Assistant Professor

Phone No: +98 21 84062???

Email: s.mohsenzade@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/Mohsenzade>

Education

Ph.D.: Power Electronics, Sharif University of Technology, 201⁹.

M.Sc.: Power Electronics, Sharif University of Technology, 2015.

B.Sc.: Electrical Engineering, Amirkabir University of Technology, 2013.

Research Interest:

- High Voltage Power Electronics Converters
- Reliability in Power Electronics Converters
- Finite Element Analysis
- Fault Current Limiters

Biography:

Sadegh Mohsenzade received his B.Sc. degree in power engineering from Amirkabir University of Technology in 2013. He then pursued his M.Sc. and Ph.D degree in power electronics, and electrical machines from Sharif University of Technology, Tehran in 2015, and 2019 respectively. Dr. Mohsenzade is currently an Assistant Professor of the Faculty of Electrical Engineering of KNTU. His research interests include high voltage power converters, reliability in power electronic converters, and fault current limiters.



Seyed Mohammad Taghi Bathaee, Ph.D.

Professor

Phone No: +98 21 84062420

Email: bathaee@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/bathaee>



Education:

Ph.D.: Power Engineering, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran, 1995.

M.Sc.: Power Engineering, George Washington University, Washington D.C, USA, 1979.

M.Sc.: Power Engineering, K. N. Toosi University of Technology, Tehran, Iran, 1977.

B.Sc.: Computer Engineering, Tehran University, Tehran, Iran, 1977.

Research Interest:

- Power system studies: Steady, Transient and Dynamic states.
- Power system Operation and Control
- Hybrid Electrical Vehicles (HEV)
- Micro grids and Smart Grids
- Renewable Energy Resources
- Cogeneration and Combined Heat & Power (CHP)
- Design of Power Transmission Line
- Distributed Control System (DCS) in Power Plant, Substation, and Building

Biography:

Born in July 1950, in Iran, Seyed Mohammad Taghi Bathaee received his B.Sc., M.Sc., and Ph.D. degrees in mathematics and electrical engineering from KNTU, Tehran University (Tehran, Iran), George Washington University (USA), and Amirkabir University (Tehran, Iran), respectively. He has served as a Professor and a member of the academic staff of KNTU. His research interest is power system analysis and control.


Masoud Aliakbar Golkar, Ph.D.

Professor

Phone No: +98 21 84062320

Email: golkar@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/golkar>


Education:

Ph.D.: Imperial College of Science, Technology , and Medicine ,University of London , UK, 1986.

M.Sc.: Electrical Engineering(Power Systems), Oklahoma State University, USA, 1979.

B.Sc.: Electrical Engineering, Sharif University of Technology ,Teheran, Iran, 1977.

Research Interest:

- Smart Grid Studies
- Distributed Generation (Deregulation)
- Distribution System Design, Optimization & Automation
- Renewable Energy Systems
- Electricity Market
- Voltage Collapse Studies in Power Systems
- Shunt Capacitors Placement on Radial Distribution Feeder
- Electric and Hybrid Electric Vehicles studies

Biography:

Masoud Aliakbar Golkar was born in Tehran, Iran, in 1954. He received his B.Sc. degree from Sharif University of Technology, Tehran, Iran, in 1977. He obtained his M.Sc. degree from the Oklahoma State University, Stillwater, OK, USA, in 1979, and pursued his Ph.D. studies at the Imperial College of Science, Technology, and Medicine, the University of London, London, U.K., in 1986, all in electrical engineering (power systems). Since 1979, he has been teaching and research at KNTU, where he currently holds the position of a Professor. He is the advisor of many electricity boards and has successfully conducted many projects for different electricity utilities in Iran. Dr. Golkar has lead numerous research groups of the Electric Power Research Center (EPRC) in the field of electrical distribution systems and reactive power studies for more than 15 years. From January 2002 to July 2005, he served as a Senior Lecturer at the Curtin University of Technology, Miri, Malaysia. He is the author of several books and has published more than 300 papers in national and international journals and conferences. Dr. Golkar's main research interests include smart grid, distributed generation, renewable energy systems, modern electric distribution systems, reactive power studies, voltage collapse studies, and load and energy management.


Alireza Fereidounian, Ph.D.

Assistant Professor

Phone No: +98 21 84062205

Email: fereidunian@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/fereidunian>


Education:

Ph.D.: Electrical and Computer Engineering from University of Tehran, Tehran, Iran, 2009.

M.Sc.: Electrical Engineering from University of Tehran, Tehran, Iran, 1997.

B.Sc.: Electrical Engineering from Iran University of Science and Technology (IUST), Tehran, Iran, 1994.

Research Interest:

- **Power Engineering:** Smart Grid, Power Distribution Systems Engineering (Operation, Automation, Design, and Planning), Power Systems Reliability, Asset Management, Artificial Intelligence and Signal Processing in Power Systems, IT in Power Systems, Deregulation and Market in Energy Retail
- **Systems Engineering:** Multi-Disciplinary Systems Architectural Design and Management, Complex Systems, Decision Making and Decision Support, Human-Automation Interaction, Adaptive Autonomy, IT Infrastructures

Biography:

Alireza Fereidounian received his Ph.D. and M.Sc. degrees from the University of Tehran, Tehran, Iran, in 2009 and 1997 respectively. He is an Assistant Professor of KNTU University of Technology, and a Post-Doctoral Research Associate of University of Tehran. His research interests include smart grids, high-reliability distribution systems, and the application of IT and AI in power systems. He also works in complex systems, systems reliability, and human-automation interactions areas. Dr. Fereidounian is a Member of IEEE and INCOSE.

**Ali Asghar Razi-Kazemi, Ph.D.***Associate Professor**Phone No: +98 21 84062413**Email: a.razi.kazemi@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/razi.kazemi>***Education:**

Ph.D.: Electrical engineering -Power System, Sharif University of Technology, Tehran, Iran, 2013.

M.Sc.: Electrical engineering -Power System, Tehran University, Tehran, Iran, 2010.

B.Sc.: Electrical engineering, K.N. Toosi University of Technology, Tehran, Iran, 2008.

Research Interest:

- Circuit Breakers On-Line Monitoring
- High Power Technology
- Pulsed Power Technology
- Reliability Centered-Maintenance
- Condition-based Maintenance
- Asset Management
- Transients in Power System
- Insulation Coordination

Biography:

Ali A. Razi-Kazemi received his Ph.D degree in electrical engineering from Sharif University of Technology, Iran, and Research Attachment at Aalto University, Espoo, Finland, in 2013. Dr. Razi-Kazemi is an Assistant Professor of the Department of Electrical Engineering at KNTU. His research interests include high power technology, reliability- and condition-based maintenance, asset management, and insulation coordination.

**Shokrollah Shokri Kojoori, Ph.D.***Associate Professor**Phone No: +98 21 84062322**Email: shokri@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/shokri>***Education:**

Ph.D.: Power Engineering, Bath University, UK, 1987.

M.Sc.: Electrical Engineering, University of Tabriz, Iran, 1977.

B.Sc.: Electrical Engineering, University of Tabriz, Iran, 1975.

Research Interest:

- Modeling of Electric Machines and Transformers
- Design of Electrical Machine and Transformer
- Analysis of Special Machines
- Fault diagnostics in electrical machines
- Linear Electrical Machine: (LDCM, LIM, LSM)
- PMSM (SPMSM, IPMSM)
- Micro machines: Design and Manufacturing
- Micro machine: Dynamics and control

Biography:

Shokrollah Shokri Kojori received his B.Sc. and M.Sc. degrees from Tabriz University, Tabriz, Iran, in 1975 and 1977, respectively. He then obtained his Ph.D. degree from Bath University, U.K., in 1988. He is currently an Associate Professor of the Department of Electrical Engineering, at KNTU. His current research interests include electrical machine analysis, modeling of electric machines and transformers, and power systems dynamic and control.



Mohammad Tavakkoli-bina, Ph.D.

Professor

Phone No: +98 21 84062371

Email: tavakoli@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/tavakoli>



Education:

Ph.D.: Power Electronics, University of Surrey, UK, 2001.

M.Sc.: Electrical Engineering, University of Tehran, Tehran, Iran, 1990.

B.Sc.: Electrical Engineering (power), University of Tehran, Tehran, Iran, 1987.

Research Interest:

- Power Electronics Converters Modeling and Design
- Advanced Modulation Techniques
- FACTS & Utility Network Control
- Power Systems Analysis and Control
- EMI/EMC in Power Electronics
- Power Quality
- Protection of Power Converters

Biography:

Mohammad Tavakoli Bina is a Full Professor of Power Electronics at KNTU. He is a Senior Member of IEEE, holding the position of Associate Editor of IEEE Transactions on Power Electronics. He obtained his PhD from University of Surrey, UK, 2001. Dr. Tavakoli Bina is the author of more than 150 journal and conference papers.

**Mohammadreza Toulabi, Ph.D.***Assitant Professor**Phone No: +98 21 450 (Int. 203)**Email: toulabi@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/toulabi>***Education:**

Ph.D.: Power System, Sharif University of Technology, Tehran, Iran, 2013-2018.

M.Sc.: Power System, Sharif University of Technology, Tehran, Iran, 2010-2012.

B.Sc.: Electrical Engineering, Sharif University of Technology, Tehran, Iran, 2006-2010.

Research Interest:

- Power System Dynamics, Control & Operation
- Renewable Energy Sources
- Microgrids and Smart Grids

Biography:

Mohammadreza Toulabi received his B.Sc., M.Sc. and Ph.D. degrees in electrical engineering from Sharif University of Technology in 2010, 2012, and 2018, respectively. He is currently an Assistant Professor of the Department of Mechatronics Engineering at KNTU. Dr. Toulabi is the author of more than 20 papers in international journals and conferences. His research interests include power system dynamics, control & operation, renewable energy sources, and microgrids.

Department of Electronics

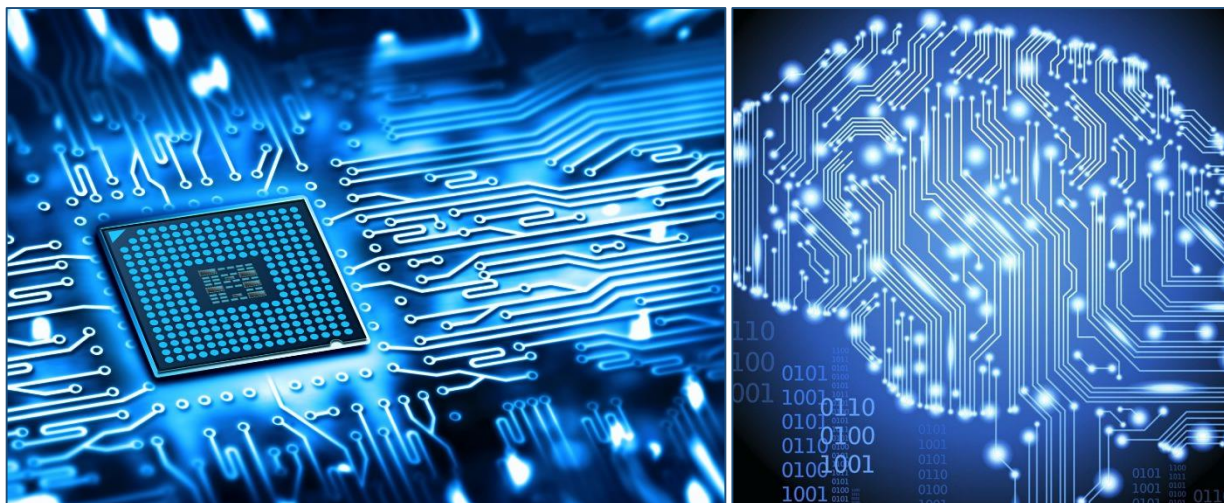
Department of Electronics is one of the first educational cores of the Faculty of Electrical Engineering. Academic activities of this department are conducted in two major areas: Semiconductor Physics and Technology and Electronic Circuits and Systems. Department of Electronics has placed KNTU among the country's highly-reputed universities in education and research in Electronics.

Core Research Areas

- Microtechnology and Sensors
- Solid-State Physics and Devices
- Nanotechnology and Nanoelectronics
- Quantum Electronics
- Analog and RF Circuits and Systems
- Digital and VLSI Systems
- Computer Systems and Networks
- Sensor Networks

Research Laboratories

- Electronic Materials Laboratory (EML)
- Semiconductor Devices Laboratory
- Organic Electronics Laboratory
- Virtual-Hardware Description Language (VHDL)
- Research Laboratory for Integrated Circuits and Systems (ICAS)
- Microelectronic Circuits Laboratory
- Electronic Signals and Systems Laboratory
- High-Frequency Circuits and Systems Laboratory (HFCAS)





Farhad Akbari Boroumand, Ph.D.

Asistant Professor

Phone No: 98 21 84062406

Email: boroumand@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/boroumand>



Education:

Post Doctorate: Nano-Organic, Electronics Sheffield University, UK, 2005.

Ph.D.: Solid State Electronics, King's College, University of London, UK, 2000.

M.Sc.: Integrated Electronics, Indian Institute of Technology, New Delhi, India, 1992.

B.Sc.: Electronics Engineering, Mashhad University, Mashhad, Iran, 1988.

Research Interest:

- Nano-Electronics and Nano-Technology
- Organic Electronics
- Solid State Electronics
- Opto-Electronics

Biography:

Farhad A. Boroumand received his B.E. degree in electronics from Ferdowsi University of Mashhad, Iran, in 1988. He obtained his M.Tech. degree from the Indian Institute of Technology Delhi, New Delhi, India, in 1992, and then pursued his Ph.D. studies in integrated electronics at King's College London, U.K., in 2000, while focusing on interactions between isolated GaAs-based MESFET's. In 2000 and 2006, he worked on four post-doctoral research projects concerning nano and organic electronics and photonic devices at Sheffield University and Surrey University, U.K. He is currently an Assistant Professor at KNTU and teaches courses such as nanotechnology, organic electronics, semiconductor devices, and modern physics. He has published over 90 journal and conference papers.

**Yousef Darmani, Ph.D.***Associate Professor**Phone No: +98 21 84062208**Email: darmani@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/darmani>***Education:**

Ph.D.: Computer Networking from the University of Adelaide, Adelaide, Australia, 2004.

M.Sc.: Digital Electronics from Sharif University, Tehran Iran, 1991.

B.Sc.: Electronics from the Science and Technology University, Tehran, Iran, 1987.

Research Interest:

- Computer Networks
- Wireless Networks
- Voice Over Internet Protocol (VOIP)
- Microcontrollers and Microprocessors

Biography:

Yousef Darmani received his B.Sc. in electronics from Science and Technology University, Tehran, Iran, in 1987 and his M.Sc. in digital electronics from Sharif University, Tehran, Iran, in 1991. After joining the Electrical Engineering Department of KNTU, he received his Ph.D. in computer networking from the University of Adelaide, Adelaide, Australia in 2004. He is currently an Assistant Professor at KNTU. Dr. Darmani's research interests are VOIP, real-time communication over the Internet, wireless and Ad-hoc networks, and their protocols and computer hardware.

**Mehdi Ehsanian Mofrad, Ph.D.***Associate Professor**Phone No: +98 21 84062421**Email: ehsanian@kntu.ac.ir**Personal website: <https://wp.kntu.ac.ir/ehsanian>***Education:**

Ph.D.: Electrical Engineering, the University of Montreal, Quebec, Canada, 1998.

M.Sc.: Electrical Engineering, Sharif University of Tech., Tehran, Iran, 1988.

B.Sc.: Electrical Engineering, Sharif University of Tech., Tehran, Iran, 1986.

Research Interest:

- Analog Integrated Circuit
- RF Integrated Circuit
- A/D, Frequency synthesizer
- Data recovery
- Mixed signal circuit
- Wireless system

Biography:

Mehdi Ehsanian received his B.S and M.S. degrees in electronic engineering from Sharif University of Technology, Tehran-Iran in 1986 and 1988, respectively. He then pursued his Ph.D studies in electrical engineering at University of Montreal, Quebec, Canada, in 1998. He worked as a design engineer at INTEL, USA, for 10 years (1999 to 2009). After which, he was appointed to the Electrical and Computer Engineering Departments KNTU as an Assistant professor. His research interests include analog and RF integrated circuits, data converters, frequency synthesizer, and data recovery, and BIST.


Faramarz Hossein-Babaei, Ph.D.

Professor

Phone No: +98 21 84062411

Email: fhababaei@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/fhababaei>


Education:

Ph.D.: Electrical Engineering, Imperial College, London, UK, 1978.

DIC: Materials Science, Imperial College, London, UK, 1976.

M.Sc.: Materials Science, Imperial College, London, UK, 1975.

B.Sc.: Electronic Engineering, AmirKabir University of Technology, Tehran, Iran, 1971.

Research Interests:

- Artificial olfaction
- Polycrystalline semiconductors
- Metal oxide electronics
- Microfluidics
- High temperature technology
- Electric heating

Biography:

Faramarz Hossein-Babaei received his B.Sc. degree in electronic engineering from AmirKabir University of Technology (Tehran Polytechnic), Iran, in 1971. He then pursued his M.Sc. degree in materials science and Ph.D. in electrical engineering at the Imperial College, London, UK, in 1975 and 1978, respectively. He has been the Head of the Electronic Materials Laboratory (EML) and the Professor of Electronic Materials at the Electrical Engineering Department of KNTU since 1980. Prof. Hossein-Babaei previously served as an Adjunct Professor at the Materials Science and Engineering Department of the University of British Columbia, Vancouver, Canada, during 2002-2007. He is the founder of multiple of high-tech spin-off companies, mostly active in the field of high-temperature materials and technology. His present research interests include electric heating, electroceramics, polycrystalline semiconductors, microfluidics, gas and humidity sensors, and artificial olfaction. Prof. Hossein-Babaei received the Khwarizmi International Award for his outstanding R and D work on high-temperature systems in 2006.



Hossein Hosseini-Nejad, Ph.D.

Assistant Professor

Phone No: +98 21 84062304

Email: hosseini_nezhad@kntu.ac.ir

Personal website: http://wp.kntu.ac.ir/hosseini_nezhad



Education:

Ph.D.: Electrical Engineering, Tarbiat Modares University, Tehran, Iran, 2013.

M.Sc.: Electrical Engineering, K.N. Toosi University of Technology, Tehran, Iran, 2001.

B.Sc.: Electrical Engineering, Noshirvani University of Technology, Babol, Iran, 1999.

Research Interest:

- Neural Signal Processing
- VLSI Digital Signal Processing Systems
- FPGA/ASIC Design of Digital Systems
- CPU Design
- Asynchronous Digital Design

Biography:

Hossein Hosseini-Nejad received his B.Sc. degree from Noshiravani University of Technology, Babol, Iran, in 1999. He obtained his M.Sc. degree from KNTU in 2001 and then pursued his Ph.D. degree at Tarbiat Modares University, in 2013, all in electrical engineering. He worked in the ASIC Design group at the University of Lund, Sweden, as a Visiting Ph.D. Researcher from April 2013 to September 2013. He joined the Faculty of Electrical Engineering of KNTU as a Lecturer in 2001, where he currently holds the position of Assistant Professor of Electrical and Computer Engineering. He is the Director of the FPGA Laboratory of the university. His research interests include the design and development of digital systems and ASIC/FPGA implementation of signal processing algorithms.



Negin Manavizadeh, Ph.D.

Associate Professor

Phone No: +98 21 84062325

Email: manavizadeh@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/manavizadeh>



Education:

Ph.D.: Solid state Electronics, Electrical Engineering, K. N. Toosi University of Technology, Tehran, Iran, 2012.

M.Sc.: Solid State Physics, K. N. Toosi University of Technology, Tehran, Iran, 2006.

B.Sc.: Physics, K. N. Toosi University of Technology, Tehran, Iran, 2003.

Research Interest:

- Micro- and Nano-electronics (Simulation and Fabrication of Semiconductor devices)
- Nano-structured Solar Cells
- Growth and Synthesis of TCO Nanostructures
- Organic Electronics (e.g., Organic Solar Cells, OLED, OFET)
- Self-Cleaning Materials and Surfaces: A Nanotechnology Approach (in Power Applications: Insulators, Cables, Lightning Systems, etc.)

Biography:

Born in Tehran, Iran, in 1980, Negin Manavizadeh received her B.Sc. and M.Sc. degrees in solid-state physics and her Ph.D. degree in electrical engineering from KNTU in 2003, 2006, and 2012, respectively. She is currently a Full-Time Assistant Professor at the Department of Electrical Engineering of KNTU.


Ebrahim Nadimi, Ph.D.

Associate Professor

Phone No: +98 21 84062204

Email: nadimi@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/nadimi>


Education:

Postdoctorate: Research fellow, GWT-TU Dresden, Germany, 2012.

Ph.D.: Chemnitz University of Technology, Chemnitz, Germany, 2008.

M.Sc.: Electrical Engineering Dept., University of Tehran, Tehran, Iran, 1999.

B.Sc.: Electrical Engineering Dept., University of Tehran, Tehran, Iran, 1995.

Research Interest:

- First principles modeling of material properties and devices
- Solid state and semiconductor physics
- Nanoelectronics
- Quantum transport
- High-k gate dielectrics of nano-MOSFETs
- 1D and 2D materials such as carbon nanotubes, graphene and h-BN
- Solid state gas sensors and biosensors

Biography:

Ebrahim Nadimi is currently an Assistant Professor of the Faculty of Electrical Engineering KNTU. He received his B.Sc. and M.Sc. from the University of Tehran in 1995 and 1999, respectively. He then obtained his Ph.D. in 2008 from Technische Universität Chemnitz in Germany. From 2008 to 2012, he pursued a research fellowship at AQ Computer and GWT-TU Dresden on joint projects with AMD and Global foundries. His research interests cover both solid-state physics and nano electronics. He applied first principles ab initio computational methods to the investigation of new emerging materials and devices in nano electronics. Nano-transistors, 1D and 2D materials, solid states gas sensors, and biosensors are the subjects of his recent researches.

**Farshid Raissi, Ph.D.***Professor**Phone No: +98 21 84062319**Email: Raissi@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/raissi>***Education:**

Ph.D.: University of Wisconsin, Madison, WI, USA, 1995.

M.Sc.: University of Wisconsin, Madison WI, USA, 1992.

B.Sc.: Electrical engineering from Louisiana State University, Baton Rouge, LO, USA, in 1988.

Research Interest:

- Solid state electronics
- Nanoelectronics
- Superconductivity
- Sensors and actuators

Biography:

After obtaining his Ph.D., Farshid Raissi joined K. N. Toosi university of technology, where he is currently teaching to do research. He is the co-founder and chairman of the board of directors of Y. N. Saleh Co., an industrial vacuum deposition system manufacturer. He is the author of the Sci-Fi novel "Faster than light" and the book "God's Grand Design", both of which are in Farsi. The latter was published in response to S. Hawking's book of "Grand Design". Dr. Raissi was granted the Khwarazmi scientific award for excellence in superconducting electronic research in 2014.


Alireza Salehi, Ph.D.

Professor

Phone No: +98 21 84062425

Email: salehi@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/salehi>


Education:

Ph.D.: Microelectronics, University of Wales, College of Cardiff, UK, 1995.

M.Sc.: Electronics Engineering, University of Bremen, Germany, 1992.

B.Sc.: Electrical Engineering, FH Kiel, Germany, 1986.

Research Interests:

- design and fabrication of semiconductor devices
- porous Si- and III-V semiconductor devices
- transparent conductors as opto-electronic devices
- organic materials for solar cell and gas sensor applications

Biography:

Alireza Salehi received his **M.Sc** degree from Kiel University of Applied Sciences, Germany, his M.Sc degree from the University of Bremen, Germany, and his Ph.D. degree from Cardiff University, UK, all in electronics. He joined the Faculty of Electrical Engineering of KNTU as an Assistant Professor in 1996, where he has been promoted to Professor of Nanoelectronics since 2006. His research and teaching interests are fabrication and analysis of optoelectronic devices using semiconductor and organic materials. His research presently focuses on gas sensors and solar cells based on several semiconductors and organic materials.

**Hossein Shamsi, Ph.D.***Associate Professor**Phone No: +98 21 84062308**Email: shamsi@eetd.kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/shamsi>***Education:**

Ph.D.: Electrical Engineering-Electronics, University of Tehran, Tehran, Iran, 2007.

M.Sc.: Electrical Engineering-Electronics, University of Tehran, Tehran, Iran, 2002.

B.Sc.: Electrical Engineering-Electronics, University of Tehran, Tehran, Iran, 2000.

Research Interests:

- Data Converters
- Delta-Sigma Modulators
- Analog and Mixed-Mode MOS IC Design
- RFIC
- Microwave Amplifiers
- RFID

Biography:

Hossein Shamsi received his B.Sc., M.Sc., and Ph.D. degrees in electronics engineering from the University of Tehran in 2000, 2002, and 2007, respectively. He has been appointed to the Faculty of Electrical Engineering of KNTU as an Assistant Professor since 2007. His current research activities include integrated circuits, data converters, RFIC, and RFID systems.



Amir M. Sodagar, Ph.D.

Associate Professor

Phone No: +98 21 84062412

Email: amsodagar@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/amsodagar>



Education:

Ph.D.: Iran University of Science and Technology, Tehran, Iran, 2000.

M.Sc.: Iran University of Science and Technology, Tehran, Iran, 1995.

B.Sc.: K.N. Toosi University of Technology (KNTU), Tehran, Iran, 1992.

Research Interests:

- Neural Interfacing
- Visual Prosthesis
- Wireless Interfacing
- Neural Signal Processing
- Analog & Mixed-Signal Integrated Circuits

Biography:

Amir M. Sodagar received his B.Sc. degree in electrical engineering from K.N. Toosi University of Technology, Tehran, Iran, in 1992. He then pursued his M.Sc. and Ph.D. degrees in electrical engineering at Iran University of Science and Technology, Tehran, Iran, in 1995 and 2000, respectively. From 2001 to 2009, he worked at NSF ERC of Wireless Integrated Micro Systems (WIMS), University of Michigan, Ann Arbor, as a Post-Doctoral Research Fellow, Research Scientist, and subsequently as the Technical Director of Biomedical Microsystems. He is currently working at KNTU as an Associate Professor of Electronics and Biomedical Engineering. Dr. Sodagar is the Founding Director of the Research Laboratory for Integrated Circuits and Systems (ICAS). He also holds the position of an Adjunct Professor at Poly technique Montreal, Montreal, Quebec, Canada. Dr. Sodagar is the author of five books, co-author of four book chapters, and author/co-author of numerous journal articles and conference papers. He has served as a member of the scientific/technical committee of several national and international conferences. He is also an Editorial Board member of the Journal of Medical Devices and the Journal of Basic and Clinical Neuroscience. Dr. Sodagar's research interests include implantable microsystems, biomedical circuits and systems, neural signal processing, and analog and mixed-signal integrated circuits.

**Hesam Zandi, Ph.D.***Assistant Professor**Phone No: +98 21 84062415**Email: zandi@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/zandi>***Education:**

Ph.D.: Sharif University of Technology, Tehran, Iran, 2012.

M.Sc.: Sharif University of Technology, Tehran, Iran, 2007.

B.Sc.: Sharif University of Technology, Tehran, Iran, 2005.

Research Interest:

- THz range devices and systems
- MEMS and NEMS devices
- Quantum electronic and quantum optic devices
- Quantum computation and information
- Superconductor devices
- Semiconductor fabrication

Biography:

Born in Tehran, Iran, in 1982, Hesam Zandi received his B.Sc., M.Sc. and Ph.D degrees all in electrical engineering from Sharif University of Technology, in 2005, 2007, and 2012, respectively. He has conducted research on the development of quantum bit devices and circuits, which eventually led to the design and development of double entangled qubits with high fidelity reading process. While collaborating with national and international labs working in this area of expertise, he pursued his post-doc research fellowship at SUT, where he developed rapid single flux quantum logic devices for ultra-high-speed digital circuits. In 2016, he joined K. N. Toosi University of Technology, Tehran, Iran, where he currently holds the position of an Assistant Professor in electrical engineering at the electronics department. His research interest is mainly focused on the design, modeling, and fabrication of THz range devices and systems in addition to MEMS and NEMS devices.

**Sadan Zokaei, Ph.D.***Associate Professor**Phone No: +98 21 84062424**Email: szokaei@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/zokaei>***Education:**

Ph.D.: Electrical Engineering, Department of Communication and Information Technology, University of Tokyo, Tokyo, Japan, 1994.

M.Sc.: University of Tehran, Tehran, Iran,

Research Interest:

- Security
- Wireless Networks
- Next-Generation Networks

Biography:

Saadon Zokaei received his Master's degree from University of Tehran, Tehran, Iran, and his Ph.D. degree in from the Department of Communication and Information Technology of University of Tokyo, Tokyo, Japan, in 1994, both in electrical engineering. He is currently an Associate Professor appointed to the Department of Electrical and Computer Engineering of KNTU. His research interests include information security, wireless networks, and next-generation networks.

**Yarallah Koolivand, Ph.D.***Assistant Professor**Phone No: +98 21 84062424**Email: y.koolivand@kntu.ac.ir**Personal website***Education:**

Ph.D.: Electronic engineering, University of Tehran, Tehran, Iran, 2018.

M.Sc.: Electronic engineering, University of Tehran, Tehran, Iran, 2005.

B.Sc.: Electronic Engineering, K. N. Toosi University of Technology, Tehran, Iran, 2002.

Research Interest:

- **Analog/Mixed mode IC design**, including data converters, special amplifiers, BGR and analog filters.
- **Bio-medical Instrumentation**, including Neuron activity recorders, ECG monitors, and Ultrasound imagers
- **Wireless transceivers**, including LNA, mixer, channel select and image reject filters, AGC, power amplifier, and frequency synthesizer.

Biography:

Yarallah Koolivand was born in Nahavand, Hamedan, Iran, in April 1980. He received his B.Sc. degree from K. N. Toosi University of Technology, Tehran, Iran, and his M.Sc. and Ph.D. degrees all in electronic engineering from the University of Tehran, Tehran, Iran, in 2002, 2005, and 2018, respectively.

In 2020, he joined the Faculty of Electrical Engineering of KNTU. His research interests include the design of analog/mixed-mode, radiofrequency, and biomedical circuits and systems.

Department of Mechatronics

K.N. Toosi University of Technology was the first of Iran's public universities to establish a department of Mechatronics. In 2003, the Faculties of Electrical and Mechanical Engineering jointly established the Department of Mechatronics through the admission of M.Sc. students of this field. The goal of this department is to create the right infrastructure for collaborations between the two faculties in order to induce synergy in the design and implementation of mechatronic products dedicated to the industry.

Core Research Areas (within the Faculty of Electrical Engineering)

- Biomechatronics
- Fault Diagnosis
- Intelligent Systems
- Robotic Systems

Research Laboratories

- Fault Detection and Identification Laboratory



**Mahdi Aliyari Shooredeli, Ph.D.***Associate Professor**Phone No: +98 21 84062403**Email: aliyari@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/aliyari>***Education:**

Ph.D.: Control System Design, K. N. Toosi University of Technology, Tehran, Iran, 2008.

M.Sc.: Control System Design, K. N. Toosi University of Technology, Tehran, Iran, 2003.

B.Sc.: Electrical Engineering, K. N. Toosi University of Technology, Tehran, Iran, 2001.

Research Interest:

- Fault Diagnosis
- System Identification
- Optimization - Fuzzy and Neural Networks

Biography:

Mahdi Aliyari Shoorehdeli received his B.Sc. degree in electronics engineering from KNTU in 2001. He then pursued his studies in control engineering and, therefore, obtained his M.Eng. and Ph.D. degree from the same university in 2003 and 2008, respectively. He is currently appointed to the Department of Mechatronics Engineering of KNTU as an Assistant Professor. Dr. Aliyari is the author of more than 100 papers in international journals and conferences. His research interests include fault detection and isolation and system identification and optimization.



Mehdi Delrobaei

Assistant Professor

Phone No: +98 21 84062402

Email: delrobaei@kntu.ac.ir

Personal website: <https://wp.kntu.ac.ir/delrobaei>



Education:

Post doctorate: Clinical Research Fellow, Lawson Health Research Institute, London, ON, Canada, 2016.

Post doctorate: Industrial Research Fellow, The University of Western Ontario, London, ON, Canada, 2012.

Ph.D.: Control Systems and Robotics, The University of Western Ontario, London, ON, Canada, 2010.

M.Sc.: Electrical Engineering, K. N. Toosi University of Technology, Tehran, Iran, 2003.

B.Sc.: Electrical Engineering, Shiraz University, Shiraz, Iran, 1999.

Research Interest:

- Biomechatronic Systems
- Assistive Robotics
- Wearable Technologies
- Augmented Reality
- Neuro modulation Optimization

Biography:

Mehdi Delrobaei received his B.Sc. degree from Shiraz University, Iran, in 2000. After obtaining his M.Sc. degree from KNTU in 2003, he pursued his Ph.D. studies at Western University, Canada, in 2010, all in electrical engineering. From 2011 to 2016, he completed his post-doctoral training at Western University and Lawson Health Research Institute, Canada. He is currently an Assistant Professor of Mechatronics and Biomedical Engineering and the leader of the Research Thrust on Assistive Robotic and Biomechatronic Systems of the Center of Research and Technology (CREATECH) of Faculty of Electrical Engineering, K. N. Toosi University of Technology. His research is currently focused on biomechatronics systems and wearable technologies.

Department of Systems and Control

Department of Systems and Control of the Faculty of Electrical Engineering is proud of its significant role in training expert individuals involved in a wide range of professional activities in both academia and the industry. Taking into consideration the theoretical and practical advancements of different fields of “systems and control”, research activities of the faculty members of the department include a variety of subjects ranging from fundamental studies on theory to application-oriented issues in a practical environment.

Core Research Areas

- Adaptive and Nonlinear Control
- Bio Mechatronics
- Decision and Cognition
- Fractional Order Systems and Controllers
- Hybrid Systems
- Industrial Systems Control
- Intelligent Control
- Modeling and Systems Identification
- Model Predictive and Optimal Control
- Multivariable Control
- Networked Control Systems
- Robotics

Research Laboratories

- Industrial Control Laboratory
- Smart Systems Laboratory
- Advanced Automation Laboratory
- Advanced Control Systems Laboratory
- Robotics Laboratory
- System Identification and Modeling Laboratory
- Systems Engineering and Cognition Studies Laboratory
- Computer Control Laboratory
- Instrumentation Laboratory




Alireza Fatehi, Ph.D.

Associate Professor

Phone No: +98 21 84062207

Email: fatehi@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/fatehi>


Education:

Ph.D.: Electrical Engineering - Control Systems, Tohoku University, Sendai, Japan, March 2001.

M.Sc.: Electrical Engineering - Control Systems, Tehran University, Tehran, Iran, January 1995.

B.Sc.: Electrical Engineering - Electronics, Isfahan University of Technology, Isfahan, Iran, September 1990.

Research Interest:

- Intelligent Control Systems
- Process Control
- Condition Monitoring
- Soft Sensor
- Fault Detection
- Performance Monitoring
- Non-monotonic Lyapunov
- Multiple Modeling and Control
- System Identification
- Industrial Automation
- Advanced Driver Assistance Systems

Biography:

Alireza Fatehi received his B.Sc. degree from Isfahan University of Technology, in 1990. He obtained his M.Sc. degree from Tehran University, Tehran, Iran, in 1995, and then pursued his Ph.D. degree at Tohoku University, Sendai, Japan, in 2001, all in electrical engineering. Dr. Fatehi is currently an Associate Professor of electrical engineering at KNTU. He is director of Advance Process Automation & Control (APAC) research group, founder and director of the Petroleum Industry Productivity Research Center (PIPRC), and a member of the Industrial Control Center of Excellence in KNTU.

**Jafar Heirani Nobari, Ph.D.***Assistant Professor**Phone No: [+98 21 84062203](tel:+982184062203)**Email: nobari@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/nobari>***Education:**

Ph.D.: Control Systems Engineering, Tarbiat Modares University, Tehran, Iran, 2000.

M.Sc.: Control Systems Engineering, Technical University of Delft, Netherland, 1994.

B.Sc.: Control Systems Engineering, Sharif University of Technology, Tehran, Iran, 1990.

Research Interest:

- Navigation
- Digital and Nonlinear Control
- Flight and Guidance Control

Biography:

After obtaining his B.Sc in electrical engineering from Sharif University of Technology in 1990, Jafar Heirani Nobari graduated from TUDelft to pursue his PhD studies in electrical engineering (control) at Tarbiat Modares University in 2000. He was a faculty member in the Department of Systems and Control, Faculty of Electrical Engineering of K. N. Toosi University of Technology. His research interests include navigation, flight and guidance control, and digital and nonlinear control.


Ali Khaki Sedigh, Ph.D.

Professor

Phone No: +98 21 84062317

Email: sedigh@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/sedigh>


Education:

Ph.D.: Control Engineering, University of Salford, England, 1988.

M.Sc.: Control System, UMIST, England, 1985.

B.Sc.: Single Honors Mathematics, University of Newcastle Upon Tyne, England, 1983.

Research Interest:

- Robust multivariable and Adaptive Control Theory
- Intelligent Control (Genetic Design and Neural Networks)
- Industrial applications
- Predictability and prediction of system's behavior
- History of Control

Biography:

Ali Khaki-Sedigh received his B.Sc. degree in mathematics from the University of Newcastle Upon Tyne, England in 1983. He then obtained his M. Eng in control system from UMIST, England, in 1985 and pursued his Ph.D. degree in control engineering from University of Salford, England, in 1988. He is currently a Professor appointed to the Electrical Engineering Department of KNTU. He has published ten books and more than 200 papers in international journals and conferences. His research interests are robust multivariable and adaptive control, theory of intelligent control (genetic design and neural networks), and predictability and prediction of systems' behavior.

**Hamid Khaloozadeh, Ph.D.***Professor**Phone No: +98 21 84062422**Email: h_khaloozadeh@kntu.ac.ir**Personal website: http://wp.kntu.ac.ir/h_khaloozadeh***Education:**

Ph.D.: Control Engineering, Tarbiat Modares University, Tehran, Iran, 1998.

M.Sc.: Control Engineering, K.N. Toosi University of Technology, Tehran, Iran, 1993.

B.Sc.: Control Engineering, Sharif University of Technology, Tehran, Iran, 1990.

Research Interest:

- System Identification
- Stochastic Estimation and Control
- Optimal Control
- Adaptive Control
- Chaos Synchronization
- Time Series Analysis

Biography:

Hamid Khaloozadeh received his B.Sc. degree in control engineering from Sharif University of Technology, Tehran, Iran, in 1990. After obtaining his M.Sc. degree in control engineering from KNTU in 1993, he pursued his Ph.D. degree in control engineering at Tarbiat Modares University, Tehran, in 1998. He is currently a Professor appointed to the Department of Systems and Control of the Faculty of Electrical Engineering of KNTU, where he is the Director of the Industrial Control Center of Excellence. His current research interests include stochastic estimation and control, system identification, optimal control, and time series analysis.

**Bijan Moaveni, Ph.D.***Associate Professor**Phone No: +98 21 84062415**Email: b.moaveni@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/b.moaveni>***Education:**

Ph.D.: Control Systems Engineering, K. N. Toosi University of Technology, 2007.

M.Sc.: Control Systems Engineering, K. N. Toosi University of Technology, 2002.

B.Sc.: Control Systems Engineering, Isfahan University of Technology, 2000.

Research Interest:

- Multivariable and Large-Scale Control systems
- Control Configuration Selection
- Estimation Theory
- Fault Diagnosis and Fault Tolerant Control Systems

Biography:

Bijan Moaveni received his B.Sc. degree in control systems engineering from the Isfahan University of Technology in 2000. He then obtained his M.Sc. and Ph.D. degrees in control systems engineering from KNTU in 2002 and 2007, respectively. From 2009-2018, he worked at the Control and Signaling Department of the School of Railway Engineering in Iran University of Science and Technology, Tehran, Iran. He is currently appointed to the control engineering group of the Faculty of Electrical Engineering of KNTU. He has been collaborating with the control engineering group of Lulea University of Technology, Sweden since 2016. Dr. Moaveni has also collaborated with many companies and industries on different projects. He is the author and co-author of about 50 journal papers, 60 technical conference papers, and two published books in Springer and John Wiley & Sons. His research interests are multivariable and large-scale control systems, control configuration selection, estimation theory and fault diagnosis and fault-tolerant control systems.



Mohammad Ali Nekoui, Ph.D.

Associate Professor

Phone No: +98 21 84062318

Email: manekoui@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/manekoui>



Education:

Ph.D.: University of Leeds, UK, 1997.

M.Sc.: University of Tehran, Tehran, Iran, 1976.

B.Sc.: University of Tehran, Tehran, Iran.

Research Interest:

- Linear Systems
- Optimization
- Fractional Order Systems

Biography:

Mohammad Ali Nekoui received his M.Sc. in electrical Engineering from University of Tehran in 1976. He obtained a Diplome d'Especlisation in instrumentation & metrologie from Ecole Superieure d'Electricite (Supelec), France. Then he pursued his Ph.D. at the School of Electrical and Electronic Engineering in Computer and Control Department from University of Leeds, U.K. in 1997. Since 1980, he has been working at KNTU, where he currently is an Associate Professor of the Faculty of Electrical and Computer Engineering. His research interests include linear and nonlinear optimization, linear systems, optimal control, and different aspects of mathematics in control.

**Amir Hossein Nikoofard***Assistant Professor**Phone No: +98 21 84062209**Email: a.nikoofard@kntu.ac.ir**Personal website: <https://wp.kntu.ac.ir/a.nikoofard>***Education:**

Ph.D.: Electrical Engineering (Control systems) Department of Engineering Cybernetics Norwegian University of Science and Technology (NTNU), Trondheim, Norway, 2016.

M.Sc.: Electrical Engineering (Control systems), University of Tehran, Tehran, Iran, 2011.

B.Sc.: Electrical Engineering (Control systems), University of Tehran, Tehran, Iran, 2008.

Research interests:

- Nonlinear state estimation and system identification
- Model Predictive Control, Adaptive Control, and Optimization
- Automatic solutions for Oil and Gas industry
- Drilling, Production, Reservoir management
- Game theory
- Soft computing, such as fuzzy logic, neural networks, and evolutionary algorithms

Biography:

Born in 1986, Amir Hossein Nikoofard received his B.Sc. and M.Sc. degrees in electrical and computer engineering from University of Tehran, Tehran, Iran, in 2008 and 2011, respectively. He then obtained his Ph.D. degree in the same field, from the Norwegian University of Science and Technology, Trondheim, Norway, in 2016. He is currently an Assistant Professor of Electrical Engineering at KNTU.


Ahmad Reza Tahsiri, Ph.D.

Assistant Professor

Phone No: +98 21 84062410

Email: tahsiri@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/tahsiri>


Education:

Ph.D.: Systems Engineering and Design from Manufacturing Engineering and Operation Management School, University of Nottingham, UK, 2003.

M.Sc.: Engineering Management from the Industrial Engineering Dept., AmirKabir University of Technology, Tehran, Iran, 1991.

B.Sc.: Applied Physics from Isfahan University, Iran, 1986.

Research Interests:

- Distributed decision making within micro-grid patterns of power generation
- Coverage control modeling for cost-effective monitoring of seas' oil pollution
- Cognitive model in management of energy market
- Analyzing and modeling the dynamics of systems for control of air pollution
- Systems optimization within multi-agents and complex systems
- Network architecture and design for Highway Automated Systems (AHS)

Biography:

Dr. Tahsiri is currently a senior faculty member of the Systems and Control Engineering Department of KNT University of Technology, Tehran, Iran. He is also the senior consultant of the University Chancellor for Strategic Developments. Dr. Tahsiri has also established a number of interdisciplinary programs at KNTU, the latest one the Systems Engineering program at KNTU. Due to his background as a specialist in systems engineering and design, he is currently collaborating with the academic staff experienced in control engineering in order to delineate a new vision of systems modeling for problem solving approaches within large and complex systems in dynamic, changeable, and diverse environments. He has proposed a number of novel theories and practices within the current context of manufacturing systems analysis and design, of which 'Quantum Manufacturing Systems' (QMS); 'Market- Process- Product Model' (MPPM), which is a pragmatic model of the 21st century manufacturing platform; and 'Dynamic Strategic Design' (DSD) methodology which is the third generation of systems optimization method are worth mentioning. Dr Tahsiri's area of interest comprise of cognitive decision making in the energy sector, manufacturing strategy development, and risk evaluation; system dynamics methodology for pollution modeling and control, traffic modeling and control, trend study upon the future behavior of businesses and industries, system architecture for optimal development within higher education, requirements engineering.



Education:

Ph.D.: Electrical Engineering, McGill University, Montreal, 1997.

M.Sc.: Mechanical Engineering, McGill University, Montreal, 1993.

B.Sc.: Mechanical Engineering, Sharif University of Technology, Tehran, Iran, 1989.

Research Interest:

- Autonomous Robotics
- Surgical Robotics
- Parallel and Cable Robotics
- Dynamical Systems Analysis and Control
- Visual Robotics
- Industrial Robotics and Automation

Biography:

Hamid D. Taghirad received his B.Sc. degree in mechanical engineering from Sharif University of Technology, Tehran, Iran, in 1989. He obtained his M.Sc. in mechanical engineering in 1993, and his Ph.D. in electrical engineering in 1997, both from McGill University, Montreal, Canada. He is currently a Professor, the university Vice-Chancellor for global strategies and international affairs, and the Director of Advanced Robotics and Automated systems (ARAS) at KNTU. He is a Senior Member of IEEE, the Chairman of IEEE control system chapter of Iran section, a member of the board of Industrial Control Center of Excellence (ICCE) of KNTU, editor in chief of the Mechatronics Magazine, and Editorial board of International Journal of Robotics: Theory and Application, and International Journal of Advanced Robotic Systems. His research interest is robust and nonlinear control applied to robotic systems. His publications include five books and more than 200 papers in international Journals and conferences.



Mahsan Tavakkoli-kakhaki, Ph.D.

Assistant Professor

Phone No: +98 21 84062285

Email: matavakoli@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/matavakoli>



Education:

Ph.D.: Electrical Engineering (Control), Sharif University of Technology, Tehran, Iran, 2011.

M.Sc.: Electrical Engineering (Control), Ferdowsi University, Mashhad, Iran, 2007.

B.Sc.: Electrical Engineering (Electronics), Ferdowsi University, Mashhad, Iran, 2004.

Research Interest:

- Robust Control Systems
- Fractional Order Systems and Controllers
- Model Order Reduction
- Control of Time Delay Systems

Biography:

Mahsan Tavakoli-Kakhaki received her B.Sc and M.Sc degrees in electrical engineering from Ferdowsi University, Mashhad, Iran, in 2004 and 2007, respectively. She then pursued her Ph.D. degree in the same field at Sharif University of Technology, Tehran, Iran, in 2011. She is currently an Assistant Professor of the Faculty of Electrical Engineering at KNTU. Her research interests are design and analysis of robust control systems, fractional order control, applications of fractional calculus in engineering, model reduction of integer and fractional order systems, and control of time delay systems.


Babak Tavassoli, Ph.D.

Assistant Professor

Phone No: +98 21 84062315

Email: tavassoli@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/tavassoli>


Education:

Ph.D.: Electrical Engineering - Control Systems, University of Tehran, Iran, 2009.

M.Sc.: Electrical Engineering - Control Systems, University of Tehran, Iran, 2001.

B.Sc.: Electrical Engineering - Electronics, University of Tehran, Iran, 1998.

Research Interest:

- Hybrid Systems
- Networked Control Systems
- Industrial Automation
- Constrained Model Predictive Control
- Control of Cyber-Physical Systems

Biography:

Babak Tavassoli received his B.Sc. in electronics engineering in 1998 from University of Tehran. He then obtained his M.Sc. and Ph.D. degrees in control engineering from the same university in 2001 and 2009 respectively. He has been working on developing fieldbus systems for industrial automation at Farineh Fannavar Co. since 2003. After serving at the Research Institute of Petroleum Industry in Iran from 2009 to 2010, he joined the Faculty of Electrical and Computer Engineering of KNTU, where he is currently an Assistant Professor. Dr. Tavassoli has published several papers. His research is mainly focused on networked interconnected systems, hybrid systems, and industrial automation.


Mohammad Teshnelab, Ph.D.

Professor

Phone No: +98 21 84062323

Email: teshnehlab@kntu.ac.ir

Personal website: <http://wp.kntu.ac.ir/teshnehlab>


Education:

Ph.D.: Doctor of Philosophy, Saga University, Japan, 1993.

M.Sc.: Electrical Engineering, Oita University, Japan, 1991.

B.Sc.: Electrical Engineering, Stony Brook University, NY, USA, 1981.

Research Interest:

- Introduction of Artificial Intelligence
- Advanced Artificial Neural Networks
- Fuzzy Control Systems
- Neuro-Controller
- Evolutionary Algorithms
- Interval Soft Computing

Biography:

Dr. Mohammad Teshnehlab is a faculty member of Electrical Eng. Department of K. N. Toosi University of Technology. His main research interests focus on intelligent systems and control.

He is a member of the Industrial Control Center of Excellence and founder of the Intelligent Systems Laboratory (ISLab.). Dr.Teshnehlab is the head and Co-founder of Intelligent Systems Scientific Society of Iran (ISSSI) and a member of the editorial board of International Journal of Information & Communication Technology Research

**Mahdi Zamanian, M.Sc.***Lecturer**Phone No: +98 21 84062306**Email: zamanian@kntu.ac.ir**Personal website: <http://wp.kntu.ac.ir/zamanian>***Education:**

M.Sc.: Control Engineering, K.N. Toosi University of Technology, Tehran, Iran, 2001.

B.Sc.: Control Engineering, University of Tehran, Iran, 1998.

Research Interest:

- Time Series
- Modeling and Forecasting
- Computer Systems
- Internet Engineering

Biography:

Mahdi Zamanian received his B.Sc and M.Sc degrees, both in control engineering, from University of Tehran and K.N. Toosi University of Technology, respectively. He then joined the Systems and Control department of KNTU in 2001, where he is teaching different courses, supervises B.Sc theses, manages academic labs, and contributes in research projects.

Part II: Research Centers

CENTER OF EXCELLENCE IN COMPUTATION AND CHARACTERIZATION OF ELECTROMAGNETIC DEVICES AND SUBSYSTEMS

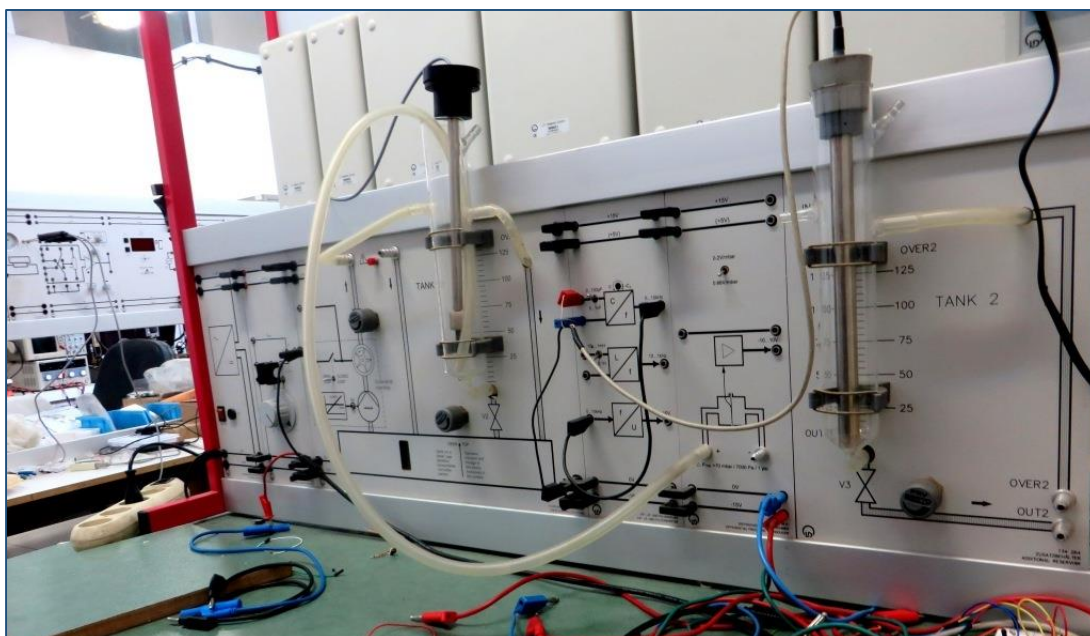
The Center of Excellence in Computation and Characterization of Electromagnetic Devices and Subsystems of K. N. Toosi University of Technology was established in 2011. The center's missions are :

- Development and conduction of applied academic research in electromagnetic computation and characterization,
- Bridging between the forefront of academic research and the industry in order to transfer emerging electromagnetic computation and characterization techniques from theory to practice,
- Providing professional consultancy as well as technical services in electromagnetic computation and characterization to the industry,
- Employment and development of parallel processing techniques for fast computations dedicated to electromagnetic fields,
- Providing technical services in non-destructive tests to petroleum, gas, and biomedical engineering industries,
- Antenna measurement and characterization in the frequency range of up to 20GHz.

Industrial Control Center of Excellence(ICCE)

The Industrial Control Center of Excellence (ICCE) of K. N. Toosi University of Technology was established in 2011. Some of the main missions of ICCE are as follows:

- Demonstration of advanced industrial control for implementation in the county's industries,
- Development, analysis, and design of control system applicable in industries,
- Production and development of standard protocols for industrial controllers,
- Product-based industrial research projects,
- Providing scientific and technical services to the industry,
- Publication and documentation of research results,
- Publication of monographs in industrial control fields, and
- Development of international relations benefiting the university.



Center of Research and Technology (CReaTech)

The Center of Research and Technology is a place for cutting-edge inter-disciplinary and multi-disciplinary scientific, technical, and technological activities and projects. The center is comprised of 21 research thrusts from different disciplines within the Faculty of Electrical Engineering. It provides three separate office halls with the capacity of up to 45 seats for researchers, a lab space to conduct practical projects and experiments, and to develop technology, a multi-purpose demo/expo hall, and a meeting room.



Advanced Robotics and Automated Systems (ARAS)

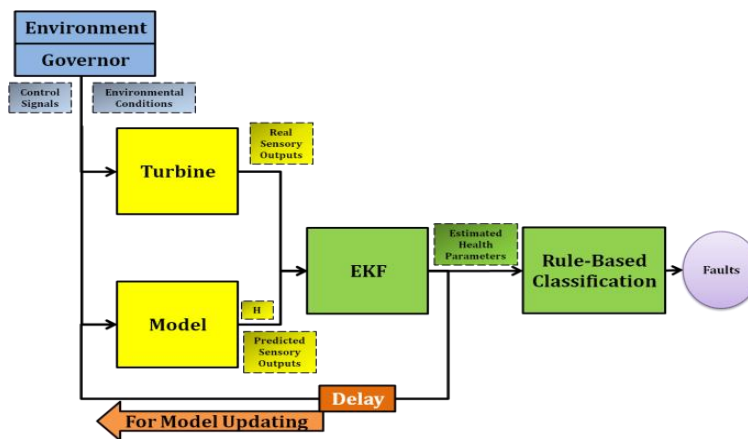
Advanced Robotics and Automated Systems (ARAS) is originated in 1997 and is proud of its 24+ years of brilliant background, and its contributions to the advancement of academic education and research in the field of Dynamical System Analysis and Control in the robotics application. ARAS is well represented by the industrial engineers, researchers, and scientific figures graduated from this group, and numerous industrial and R&D projects being conducted in this group. The main asset of our research group is its human resources devoted all their time and effort to the advancement of science and technology. One of our main objectives is to use these potentials to extend our educational and industrial collaborations at both national and international levels. In order to accomplish that, our mission is to enhance the breadth and enrich the quality of our education and research in a dynamic environment. The current industrial and R&D projects of the group are as follows:

- **Autonomous Robotics (AR):** Research on different methods on perception, planning, and control of autonomous robots is pursued in this group. The main research project in the group relates to the development of autonomous vehicles by implementation of state-of-the-art algorithms such as deep learning on visual data to detect and track moving objects in their frontal view. In another line of research, analyzing human temporal behavior whether in a vehicle utilizing face features, or in other environments through body joints detection is under study.
- **Surgical Robotics (SR):** The surgical robotics group aims at developing new robotics-based technologies for robot-assisted surgery and surgery training applications. These robotic systems will enhance the safety and efficiency of medical surgeries, leading to the enhancement of people satisfaction in dealing with the healthcare systems, in particular, patients, surgeons, and residents. This group has enjoyed the collaboration and consultation of several national and international partners in the fields of engineering and medical sciences.
- **Mixed Reality in Surgery (MR):** This research group aims to build a simulator of vitrectomy and cataract surgery using virtual reality to provide an immersive environment for eye surgery fellows. This is a joint collaboration research with Surgical Robotic (SR) to incorporate the mixed reality simulation tool to ARASH:ASiST, the product developed in SR group for Vitrectomy training.
- **Parallel and Cable Robotics (PCR):** Increasing performance demands necessitate design of new types of robots with larger work space, being capable to perform at higher accelerations. In this group study on parallel robots and their potential application are followed in details. Furthermore, cable-driven redundant parallel manipulator (CDRPM), are used for application with large work space. In this group several applications in which a CDRPM is used are followed, and the challenging issues in the optimal kinematics structure, dynamics formulation, and control of such structure are studied.
- **Dynamic System Analysis and Control (DSAC):** There are two main stream of research pursued in this group. Study of dynamical systems behaviour and stability analysis, and to apply the developed theories to practical systems especially on robotics applications. Design and implementation of nonlinear and H-infinity robust controllers for different system with time delays, and development of state-dependent Riccati equation (SDRE) estimators of nonlinear systems with uncertainty are representative research being accomplished in this group.
- **Industrial Projects (IndP):** Many industrially funded projects with the objective of design and implementation of robotics and automated products are being accomplished in this group. These products include: Casting robots and machines, welding robot, automatic quality control machines for piston pins, robotic cells and SPC software. Recently we have acted as the main scientific supervisor of Iranian national intelligent PIG project, to provide three types of intelligent PIG, namely High Resolution **MFL**, **TFI**, and the **Calliper**.

Advanced Process Automation and Control (APAC) Research Group

The APAC research group was established in 2007 with the vision of conducting research on theory and application of advanced control and automation systems. APAC team succeeded in opening up new horizons on control theories as well as conducting several industrial projects. Some of these projects are as follows:

- Advanced process control (APC): Universal Control System (UCS); APC for Tokamak Machine
 - Condition monitoring: Fault detection in gas turbine engine and cement rotary kiln; Soft sensor in the oil industry; Performance monitoring
 - Mechatronics systems: Aerodynamic Load Simulator; Electrostatic and Electrohydraulic Actuators
 - Robot Design: Rescue robot; Two-wheel robot, (Segwat), Autonomous mobile robot, Advanced driver assistance systems (ADAS)
 - Research on control theories: Adaptive control, Predictive control, Intelligent control, Actuator allocation,
- APAC Lab Complex.** The lab complex includes: Advanced Control Lab., Advanced Automation Lab., Fault detection and Identification Lab., Mechatronics Lab., and Process Control Lab.



PART III: International Academic Collaborations



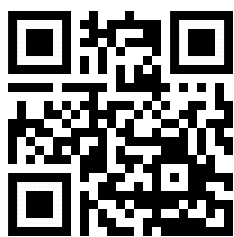
International Academic Collaborations

Among the superior electrical engineering schools all around the country, the Faculty of Electrical Engineering of K. N. Toosi University of Technology benefits from its extensive international academic collaborations. The Faculty had a joint Masters degree programs in Power Engineering with the Leibnitz University of Hannover (Germany), and another in Biomedical Engineering with Picardie University Jules Verne (France).

The Faculty has a long list of international collaborators in joint research at both Masters and Ph.D. levels. Institutes collaborating with KNTU are as follows: the University of Michigan, INRIA Research Institute (France), University of Picardie Jules Verne (France), École Poly technique de Montréal (Canada), University of Laval (Canada), ETS (Canada), University of Dublin (Ireland), Fraunhofer Research Institute (Germany), University of Bremen (Germany), and ETH-Zurich, (Switzerland).

2022

Faculty of Electrical
Engineering



Address: Faculty of Electrical Engineering, K.N. Toosi
University of Technology, Seyed-Khandan bridge, Shariati
Ave., Tehran, Iran.

Postal Code: 163171419

P. O. Box: 16315-1355