

Head of the department:

**Ph.D., associate professor Abdujapparova Mubarak Baltabaevna**

**Reception days:** Tuesday, Thursday from 15:00 dan 16:00

**Phone:** (+99871) 238-65-56

**E-mail:** [abdujapparova@tuit.uz](mailto:abdujapparova@tuit.uz)

"Telecommunication engineering" department established on order #905 of August 29, 2013, the rector of the Tashkent university of information technologies named after Muhammad al-Khwarizmi on the basis of the former departments "Telecommunication networks and switching systems" and "Telecommunication transmission systems". For the newly created department, the head of the department was appointed Ph.D., associate professor A.M. Eshmuradov, he managed the department until September 2019. Since September 2019, the department has been managed by Ph.D., associate professor M.B. Abdujapparova. At present, 12 professors and teachers work at the newly formed department. Among them: 1 PhD of technical sciences, professor, 4 PhD of technical sciences – 4 associate professors, 3 senior lecturers, 3 assistants and 1 trainer-teachers.

### **History of the department "Telecommunication networks and switching systems"**

The department "Telecommunication networks and commutation systems", being a special department of the "lark" of the university, was established in 1957 and was first named "Telephone communication", then during 1964-1997 the department of "Automatic telecommunications", during 1998-2013, the name "Telecommunication networks and switching systems". The first head of the department was associate professor V.E. Korotkevich.

In previous years, the department held classes in the following disciplines: "Telephone communication", "Telegraph communication" and "Power supply of communication organizations".

During these years, the department provided a large scientific and methodological assistance from the chairs of other electrotechnical institutes of communication. Especially in this work it is necessary to note the well-deserved contribution of the laureate of the state award of associate professor of the department "Telephony" of the Leningrad electrotechnical institute of communications N.V. Zapletyn. He gave young first-come students lectures and practical classes in the discipline of "Telephony", and also took an active part in organizing and equipping the training laboratory.

Also the department was greatly assisted by the organization of educational, methodical and scientific works by professors-teachers of the Moscow, Leningrad and Odessa institutes, such as: M.M. Zhdanov, R.A. Avakov, O.N. Ivanova, Z.S. Kakhanova, V.N. Roginsky, B.S. Livshits.

In 1958-1959 academic year the head of the department was a graduate of the Leningrad electrotechnical institute of communications, Ph.D., associate professor N.V. Reshetnikov. Together with him this year the employee of the Ministry of Communications of Uzbekistan V.K. Obidin began to work, also the graduates of the Moscow electrotechnical institute of communications V.M. Son and L.V. Suslov began their work at this department.

During the subsequent various years at the department "Telecommunication networks and switching systems", the senior teacher V. Semchenko, associate professors M. Sh. Zakhidov, E. Kh. Allaev, professor V.M. Son and the senior lecturer N. Kh. Gulturaev.

Young teachers of the department were constantly sent to target study in postgraduate study in the institutes of communication of the former Union. Of these, the first in the department defended the diploma project and graduated from the electrotechnical institute of communications in the second year of

M.Zakhidov. In 1965 he successfully defended his Ph.D. thesis at the department of telephone communication of the Leningrad electrotechnical institute of communications. He returned and worked as a dean of the faculty of automatic telecommunications at the Institute, vice rector for academic work, and then worked actively as deputy minister of communications of the Republic. In 70-80 years of the last century from the CIS countries, the department was joined by other returning gifted young specialists who defended their Ph.D. theses. In this series were the associate professor E.Kh.Allaev, V.I.Suvorov, V.N.Sarev, N.S.Khadzhaev, A.M.Eshmuradov, S.S.Parsiev, R.A.Sharipov, A.A.Adiyarov, R.P.Abdurakhmanov. In the 90s G.S.Kotlobulatov, A.A.Kurmishcheva defended her thesis and received a Ph.D. degree of pedagogical sciences.

The work of professor V.M.Son "Parallel commutation package" in 2003 in the United States was adopted as an invention and the author's certificate was given to him. In 2003-2004, 4 scientific articles were published by faculty members in the USA.

Associate professor S.A.Sadchikova in 2012 (under the direction of V.M.Son) successfully defended her PhD dissertation on "Models and methods for calculating broadband associative switching networks".

### **History of the Chair "Telecommunication Transmission Systems"**

The department "Telecommunication transmission systems", being a special department of the "lark" of the University, was established in 1958 and was first named "Long distance communication". Since 1964-1965 academic year the department has been called "Multichannel electrical communication", and since 1998-1999 academic year "Telecommunication transmission systems".

At the first stage, the senior scientific employee of the Central Research Institute of Communications M.U.Polyak took part in the creation of multichannel electrical communication equipment and the first teachers, associate professor N.Tikhomirov, lecturer of the Leningrad electrotechnical institute of communications, were sent to the department. They took part in the development of the first generation of multichannel communications equipment. The chair was taught by the technical school teachers and the leading specialists of the Ministry of Communications of the Republic. To them were added the graduated from the Moscow and Leningrad electrotechnical institute of communications M.G.Vasileva, N.Yu.Suslov. At the Department of Telecommunication Transmission Systems, N.Yu.Suslov was appointed the first head of the department. In the course of 1962-1972, the department was managed by Ph.D., associate professor A.P.Chernenko, who worked as a researcher in the Far East Telecommunications Company in Leningrad and took part in the development of multiplexing devices for multi-channel signals.

In 1972, the head of the department was appointed Ph.D., associate professor I.R.Berganov. A year later the chair was given permission for the preparation of candidates of sciences. In the beginning of the 1970s, the defended PhD's dissertations of Kh.A.Sharifova, who graduated from the postgraduate course R.I.Isaev, B.K.Abidov, F.B.Kuzakhmedova, and V.S.Sromorshevsky began their work at the department. L.N.Torskaya joined them from the Tashkent city telephone exchange. In the 70 years the department formed its scientific direction. Research works were carried out on the themes: "Suitability for use and development of measures to improve transmission systems", "Automation of the technical service of the primary communication network".

In 1975-1982, defended candidate dissertations R.I.Isaev, M.N.Bakhtiev, M.A.Akilkhanova and V.S.Sromorshevsky.

In 1982, the head of the department was appointed Ph.D., associate professor Kh.A.Sharifova.

In 1983, with the guidance of the senior teacher R.I.Isaev, an optical transmission system designed for 30 telephone channels was developed, prepared and put into operation for the first time among higher education institutions of communication technology. In the same year, the institute was visited by one of the developers of quantum generators, Nobel prize winner, academician of the Academy of Sciences of the

USSR A.M.Prokhorov and a member of the Academy of Sciences of the USSR Yu.M.Dianov. They visited the laboratory of the department, got acquainted with the laboratory work on the transfer of information through fiber-optic systems and praised these works. In 1984, for the first time R.I.Isaev began to give lectures on the course "Fiber optical digital transmission systems" to students of the faculty of Multichannel telecommunications and under his leadership for the first time in the Republics of Central Asia and Kazakhstan a 4 km fiber-optic communication line between 34 and 41 ATS of the city of Tashkent. In 1989, a 16 kilometer local fiber-optic communication line was built between the Tashkent telecentre and the center of the Zangioty district, and 120 telephone channels were organized through this line. The Institute at the training and production base developed and built a hybrid solar-wind system for 250 watts providing uninterrupted power for communication facilities. In 1997-2004, 5 kW, 10 kW hybrid stations were built, in 2014 JSC "Uzbektelecom" commissioned solar power plants for more than 40 facilities and in 2010 on behalf of the Republic of Uzbekistan through the Ministry of information technologies and communications of the Republic of Uzbekistan was the work "Solar-wind diesel generator power plant providing uninterrupted electrical energy facilities located in rural areas and in places remote from the mass electricity network" at the International conference "Development of telecommunications" and in 2015 carried out its construction.

By the end of the 80s of the last century, having prepared their scientific research, they defended their theses for a PhD of technical sciences (under the guidance of associate professor R.I.Isaev), V.M.Makhkamjonov and S.N.Ursu.

From September 1991 to January 2005, the duties of the head of the department were again performed by I.R.Berganov.

In 1996, the department organized its branch at the Tashkent telegraph and telephone station. In the course of different years, the department was headed by PhD of technical sciences, associate professor M.Sh.Zakhidov, R.D.Sulaymonov, A.Votsehovskiy, Doctor of technical sciences, associate professor S.A.Agzamov.

In 2002 he defended his thesis (under the direction of I.R.Berganov) post-graduate student of the department V.A.Chanishev.

Starting from 2005-2006 academic year the department was again organized, members of the department "Metrology, standardization and certification" were included in it and the head of the department was appointed Ph.D., associate professor R.I.Isaev. During 2005-2011 the department represented its activity in the composition of candidates of technical sciences, associate professors M.P.Parpiev, Kh.M.Khoshimov, senior lecturers R.N.Radjabova, R.K.Atametov, G.Dj.Ahmedova, L.P.Bildina, U.N.Karimova, G.K.Mirazimov, N.A.Poletaeva, D.Kh.Ibatova, assistants of N.A.Karimov, G.K.Muratova, G.S.Rakhmonova, Sh.A.Tulyaganova. Starting from the 2006-2007 academic year, their composition was invited by Ph.D., associate professor N.Yu.Yunusov from the Department of electronics and circuit engineering. Since 2009-2010 academic year the department was again organized again, members of the chair "Communication lines" – associate professors B.A.Davletyarov, S.S.Sidikov, senior teachers – S.D.Dudyuk, R.Z.Kamaliddinov, R.U.Uktamov, assistant O.N.Nushtayeva.

The post-graduate student of the department J.D.Mukimov defended his thesis on the subject: "Information protection of the channels of telecommunication transmission systems" (under the direction of Ph.D., Professor R.I.Isaev).

Since 2007-2008 academic year at the department, as a result of the initiative and active activity of the head of the department R.I.Isaev and associate professor N.Yu.Yunusov, a master's degree in the specialty 5A522203 – Optical processing systems of communication and information was opened. During the period 2007-2008 2010-2011 this field was successfully completed by 44 masters. During the 2012-2013, 2013-2014 academic years, the master's theses of 9 undergraduates were defended in the specialty

5A301803 – Information measurement systems. Today they conduct their activities in the field of telecommunications and informatization of our Republic and foreign countries.

During these years lecture, laboratory and practical classes were held at the department for students of the disciplines: “Theory of optical communication”, “Methods and means of optical information development”, “Circuitry of optoelectronic devices”, “Theory of stable operation of telecommunication systems”, “Patenting, Licensing and Certification”.

Under the guidance and initiative of R.I.Isaev, the laboratory “Optical communication systems” was organized at the department, it was equipped with modern laboratory devices that allow to study the characteristics and parameters of active and passive elements of optical communication systems, the peculiarities of the operation of this system.

Taking into account the results of these works by the order of the scientific council of the University, R.I.Isaev was transferred to the position of professor of the department, R.N.Rajapov to the post of associate professor.

During 2011-2013, the department was headed by Ph.D. J.T.Maksudov, Ph.D., associate professor M.P.Parpiev.

Since the beginning of the department’s existence, about 4000 specialists have been trained, about 400 scientific articles, 5 textbooks have been created, about 100 methodological and teaching aids have been produced, 20 author’s certificates have been taken, 6 candidate's degrees, about 60 master’s theses.

### **The new history of the department "Telecommunication Engineering"**

“Telecommunication engineering” department established on order #905 of August 29, 2013, the rector of the Tashkent university of information technologies named after Muhammad al-Khwarizmi on the basis of the former departments “Telecommunication networks and switching systems” and “Telecommunication transmission systems”. For the newly created department, the head of the department was appointed Ph.D., associate professor A.M. Eshmuradov, he managed the department until September 2019. Since September 2019, the department has been managed by Ph.D., associate professor M.B.Abdujapparova. At present, 12 professors and teachers work at the newly formed department. Among them: 1 PhD of technical sciences, professor, 4 PhD of technical sciences – 4 associate professors, 3 senior lecturers, 3 assistants and 1 trainer-teachers.

During the last 10 years professors and teachers of the department have achieved outstanding results in scientific research, spiritual and educational work. Successfully defended Ph.D. theses S.A.Sadchikova (in 2012), also working in SUE UNICON.UZ. J.D.Mukimov (in 2012) under the direction of Ph.D., Professor V.M.Son, Ph.D., Professor R.I.Isaev.

In 2018, M.B.Abdujapparova, under the guidance of Professor A.A.Khalikov, A.A. Muradov, under the guidance of Professor T.N.Nishanbaev, defended their doctoral dissertations and received a Ph.D. in technical sciences.

In the 2019-2020 academic year, defense of dissertations is planned for the degree of Doctor of Philosophy in Technical Sciences (PhD) of teachers: Kh.G.Soatov on the theme "Development of a model for increasing the channel capacity in optical access networks" (under the supervision associate professor A.M.Eshmuradov), G.Kh.Mirazimova on the theme “Methods for assessing the quality of the optical channels of systems with channel multiplexing” (under the supervision of Ph.D., professor R.I.Isaev).

Teachers of the department have upgraded their qualifications in leading universities, educational centers in the areas of telecommunications, programming technology of the countries of India (assistant Kh.G.Soatov), the Republic of South Korea (assistants Kh.G.Soatov, R.Kh.Nasimov, J.A.Abdujalilov, A.A.Muradova), Japan and China (senior lecturer M.B.Abdujapparova, associate professor S.A.Sadchikova),

Belgium and Malaysia, Switzerland, Singapore, Greece. The department is in constant communication with specialists of branches in Tashkent city of NEC (Japan), SHANHAY BELL, ZTE, Huawei (China), Daewoo (Korea), Siemens (Germany).

In the last two academic years, 30 scientific articles were published by the members of the department in the journals "Bulletin of TUIT", "Generation of Muhammad Al-Khwarizmi", "Bulletin of TSTU named after Islam Karimov", "Advanced Science Journal" (USA), more than 100 theses in International and Republican conferences.

On the basis of the order of the rector of the University teachers of the department "Telecommunication engineering" were appointed curators in 12 academic groups of the faculty "Telecommunication technologies". Teachers of the department conduct spiritual and educational, cultural and educational work with students attached to them groups.

The curators of the groups at the curatorial hours acquaint students with the decrees and decrees of the President of the Republic of Uzbekistan, the Law "On Education" of the Republic of Uzbekistan, as well as the "National Program for Personnel Training", the rules of upbringing, the university's internal rules and the activities of communication organizations. Students of the groups actively participate in various activities of the University in spiritual and educational work. The curators also organize excursions to the "Communication history museum", "Memory square", the "Amir Temur" Museum, the "Youth activity house", the National Library named after Alisher Navoi, and the communication organization of "Uzbektelecom", the Center for the development of telecommunications and personnel, "UzMobile". On the hours of spirituality and enlightenment, interviews are conducted on the following topics: "Communication culture", "Customs and traditions of the people, the basis of youth education", "The life of great thinkers", "Vigilance is a requirement of time", "Fighting terrorism", "Combating religious extremism and terrorism".

Also at the department the leading teachers of the department R.I.Isaev, A.M.Eshmuradov, S.A.Sadchikova, M.B.Abdujapparova, A.A. Muradova on the teacher-student system constantly work with the students of the masters.

## Bachelor's program

5350101

Telecommunication technologies (Telecommunications, TV Broadcasting, Mobile systems)

## Master's program

70611001

Telecommunication engineering («Telecommunication networks», «Information transfer systems»)

70611005

**Technical operation of fiber-optic networks**

## Disciplines taught at the department

### Bachelor:

- Multimedia communication networks
- Next generation convergent networks
- Optical communication systems

### Master:

- Introduction to IMS;
- IMS signaling protocols;
- Optical communication networks;
- Optical transport networks.
- Maintenance in the optical communication network;
- Technical operation of optical communication networks;
- Design of optical communication networks;

## Teaching staff of the department

- Abdujapparova Mubarak Baltabaevna- head of department, PhD;
- Isaev Rikhsi Isakhodzhaevich- Ph.D., professor;
- Eshmuradov Abdimurod Mengtashevich- Ph.D., associate professor;
- Sadchikova Svetlana Aleksandrovna- Ph.D., associate professor;
- Muradova Alevtina Aleksandrovna- Ph.D., acting associate professor;
- Ismanov Kobuljon Abdurakhmonovich - PhD, associate Professor
- Mirazimova Gulnora Khasanovna- senior lecturer
- Normatova Dilbar Turgunovna- senior lecturer
- Davletova Kholisa Rakhimdzhonovna- assistant
- Kadirova Laylo Imomaliyevna- assistant;
- Tursimuratov Saparniyaz Salauatovich- assistant;
- Komilov Rasul Komilovich- trainee teacher;
- Almardanov Muxriddin Xurram o'g'li - trainee teacher.

## Professors-teachers of the department leading hourly activities:

- Khaitbaev Aybek Fayzullaevich- senior lecturer;
- Sherjanova Komila Saparbayevna- trainee teacher;

## State and foreign grants implemented at the department:

- "Research and development of a method for planning the level of optical access of the telecommunications network in Uzbekistan" (Ph.D., associate professor A.M.Eshmuradov);
- "Modernization of urban and rural telecommunications networks based on optical information transmission systems" (A.Z.Arifdjanov);
- "Investigation of the reliability of fiber-optic communication cables" (Ph.D., professor R.I.Isaev);
- "Development of hardware-software CIP for subscriber classification" (Ph.D., professor R.I.Isaev);

- “Research and development of an information and measuring system for monitoring the functioning of autonomous solar power plants of communication facilities” (Ph.D., professor RI Isayev).

## Scientific and methodical works of the department

- Eshmuradov A.M. Soatov Kh.G., Muzafarov F.A. - “Internet networks and services”. -Textbook. -T. “Alokachi”, 2017, p.476.
- Eshmuradov A.M. Sadchikova S.A.-Abdujapparova M.B. “Broadband networks”. “Alokachi”, 2017, p.216.
- Isaev R.I.- “Multimedia communication networks”. -T. TUIT, 2016, p.178.
- Radjapova R.N. - “Next generation convergent networks”. -T. “Alokachi”, 2017, p.240.
- Mirazimova G.Kh., Yunusov N.Yu. - "Optical communication systems" Tutorial. -T. “Alokachi”, 2017, p.196.
- Ibatova [Kh](#)Yunusov N.Yu. - “Multimedia communication networks”. Tutorial. -T. TUIT, 2017, p.259.

## International relations of the department

- Universities of KAIST, INHA (South Korea);
- Technical University of Drezden (Germany);
- University of Webster (USA);
- Center for Development of Advanced Computing, CDAC (India);
- Belarusian state university informatics and radiotechnics;
- Leading universities of Russia.
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## Promising relations of the department with enterprises of the sphere

- JSC “Uzbektelecom”;
- Branch “Telecommunications transport network” of JSC “Uzbektelecom”;
- Branch “Center for the development of telecommunications and personnel” of JSC “Uzbektelecom”;
- Branch “Tashkent city telephone network” of JSC “Uzbektelecom”;
- Branch “Tashkent” of JSC “Uzbektelecom”;
- [UZSUE](#) ;
- Regional branch of the corporation “Huawei”;
- Regional branch of the corporation “ZTE”.