



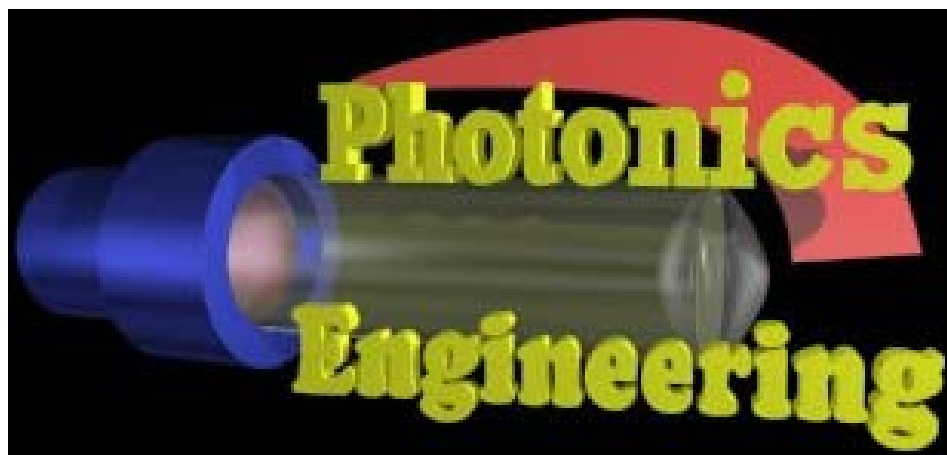
Warsaw University of Technology



Institute of Electronic Systems

Department of Measurement Systems and Optoelectronics

PERG and ELHEP Research Groups



Ryszard S. Romaniuk

Bibliography (1975-2004)

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Warsaw, Poland, November 2003



Contents:

1. Summary
2. CV, Individual Contributions as Engineer/Scientist, Educator and Technical Leader
3. Evidence of Technical Accomplishment, Technical Publications and Presentations
 - I. Domestic Journals
 - II. International Journals
 - III. Domestic Conferences and Invited Presentations
 - IV. International Conferences
 - V. Books, Chapters in Books, Editorships
 - VI. Reports from Research Projects, Expertises, (chosen)
 - VII. Patents and Other Publications (chosen)
 - VIII. Research Results Applied in Practice (chosen)
4. Selfportrait
5. Annexes

1. **Education:** – M.Sc.El.Eng., WUT, 1975/76; Ph.D.in El.Eng., WUT, 1979/80; Chartered Eng., 1989 MEN/NOT; Eur.Ing., FEANI, Paris, 95; D.Sc., WUT, 2002;
Employed: Warsaw University of Technology (WUT) since 1.X 1976 Ph.D. studies, since 1.X 1980 Adj.Professor;
2. **Research specialty:** electronics engineering, optoelectronics, measurement systems;
3. **Referee:**
4. **Summary of research results (last 5 years)**
 - **92 published papers in domestic journals:** (20), Electronics and Telecom. Quarterly of Pol.Acad.Sci.; Electronics Monthly; Telecom Review; Electronization, Glass and Ceramics; Mechanical Digest; Measurements, Automation and Control; Review of Medical Technology; Acta Ophthalm. Polonica, Bull.Min.of Communications; Bull.Institute of Communications; Bull.Machine Industry; Bull. Teleelectronics Industry, Polish Innovation Market; Problems; PC Kurier, Polish Science – Bull Pol.Acad Sci.; - coauthor 50;
 - **92 published papers in international/abroad journals:** (30) Optoelectronics Review, Biocyb.&Biomed.Eng.PAS, Optica Applicata, Int.Journ.on Optoelectronics (Taylor&Francis London), Sensors&Actuators Elsevier, Journ.Roum.Acad.Sci., Journ.of Optical Sensors (Newman-Hemisphere, London), Proceedings of SPIE (Bellingham,WA,USA) (70); - coauthor 70;
 - **187 presentations during domestic conferences and invited papers, 110 published:** (34), Nat.Symp.Telecommunications; Optical Fibres and Their Applications; Non-Telecom Opt.Fibres; Microelectronics; Nat.Congr.Metrology; Inter-university Metrology Conf.; Pol.Acad.Sci.School on Optoelectronics; Nat.Conf.Automation; Nat.Conf.Enviro. Protection; Nat.Conf.Robotics; Conf.Series Polish Chapter SPIE, (L-Metry, Syst.Opt.Security), Nat.Conf.URSI; Conf.Sensors Electr. and Optoelectr.; Nat.Conf. Circuit Theory; Nat.Conf.Energoelectr.; Plen.Conf.Polish Committee of Optoelectronics, Assoc.Pol.El.Eng.; Plen.Mtg. Section Optoelectronics, Com.Electr and Telecom, Pol.Acad.Sci.; Sect.Mtg.Exper.Mechanics., Com.Mech.Pol.Acad.Sci., Internet-Poland Trade Fair; Sci.Adv.Com. of Ministry of Communications; Techn.Inst.of Nat. Air Force; M.Kopernik Society; Conf.Inst Exper.Phys.Warsaw Univ.;
 - **97 presentations during internat./abroad conferences, 60 published:** (10) IEEE, SPIE, IMEKO, URSI, Europto, ECOC, OSA, QUELS, Electron. for LHC Exper., Europ.Laser Congr., OPTO, (San Diego, Pittsburg, Boston-MIT, Chicago, CalTech,LosAngeles, Rochester, Seattle, St.LakeCity, Ipswich, Cambridge, London, Paris, Hague, Berlin, Jena, Innsbruck, Cannes, Berkeley, Helsinki, Orlando), IEEE SBCongress Eindhoven and Cairo, Progr. Committee of Optoelectronics Taylor&Francis Londyn, Progr.Committee Laurin Photonics Pittsburg USA, Photon.Inf.Gatekeepers-Boston, IEEE Headquat.-Piscataway NJ, SPIE Headquarters-Bellingham WA;
 - **30 books, chapters in books, editorships:** (11) manuals to Optoelectronics Schools, issued by Com.Telecom Pol.Acad.Sci., no coauthors; 4 booklets (Publ. OMEI, Publ.Inst.Communic.; Publ. ITME-Cemat, Publ. Glass Works Biaglass) -5 coauthors., 10 vols. Proc.SPIE, next two in preparation, 4 spec. issues of prof.journ. (Int.J.on Optoelectr., Londyn, Optoelectronics Review, Elektr. and Telecom. Quarterly by PAS, Electronics by SEP);
 - **65 reports,** (30) industrial projects (15), computer programmes (10), **20 industrial applications** and production of optical fibre components and devices for industry, biomedicine and military, catalogue of products and book of technical notes of optical fibre components; Business cooperation with Glass Works Biaglass – Dept. of Fibre Optics; Main Domestic Res. Programmes: CPBR Optoelectronics (85-90), CPBR Optical Communications, Photonics Engineering (95-2001), Nat.Res.Comm. Grants (5); Nat.Res.Progr.in Optoelectronics (from 2004-);
 - **financial resources gained** for the University from the grants: all approx. 2mln \$; last five years a few hundred thousand \$; from 2004 FP6 CARE 0,5mlnEur.
 - **a few hundreds of editorial references:** since 1992 referee and memb.Prog.Com., Laurin Publ, Photonics Spectra, MA, USA, 1990-1998 memb. Prog.Com. and referee Intern. Journal of Optoelectronics (Taylor&Francis, Londyn), memb. Prog.Com. Int.Photonics Award “Photonics Circle of Excellence” MA,USA; memb. Int.Edit.Board - Fiber Optics Communications and Sensors, Boston, USA; memb. Int.Adv.Committee -Opto-Electronics Review, memb.Prog.Comm. Electronics Monthly, memb. Fiber Optics Committee of Polish Standards Committee;
 - **1 patent** – method to perform optical fibre sensor (4 co-authors);
5. **Summary of teaching:**
 - **5 manuals published on Internet,** since 1995 on own didactic server of PERG nms.ise.pw.edu.pl Res.Group; Internet Lab.“Electr.for High En.Phys Exper.;
 - **1 laboratory booklet,** Warsaw Univ.Technn.Edit., 1998, 1 issue, (5 co-authors), Lab. Optoelectronics;
 - **lectures (new):** Microwave Electronics of Solid State, Optoelectronics, Optical Communications, Photonics, Integrated Optics, Optical Fibre Technology, Optical Fibre Sensors; Mesurement Systems, Optical Metrology, DWDM Technology, (Electronics for HEP Experiments), M.Sc. and Ph..D. seminar lectures;
 - **teaching aids:** several laboratory set-ups, didactic materials published on own www server <http://nms.ise.pw.edu.pl>, during 1995-2001 experimental metrological server working as a part of public meteo network;
 - **PERG - Photonics and Web Engineering Res.Group:** initiator of the group at the WUT Faculty of Electr.and Inf.Techn., since 95, now around 40 persons, in which 6 Ph.D.students from WUT.ISE and 6 Ph.D.stud. from Inst.Exper.Physics Warsaw Univ., The Group has a few tens of publications domest. and intern. The Gropu works at WUT and DESY(Hamburg) and CERN(Geneva). PERG promoted over 40 students. The Group co-organizes int. astronom. Res. Progr. Pi-of-the-sky in cooper. with ESO Las Campanas, Chile;
6. **Summary of human resources training (last 5 years):**
 - **Ph.D. students supervision** –now PERG Lab. has 6 Ph.D. stud from WUT and 6 from WU. Two Ph..D. theses are opened;
 - **Lectures for Ph.D. students** – PERG lab has lectures for Ph.D. students from photonics, measurement systems and high energy physics experiments;
 - **Lectures for engineers.,** in Glass Works Biaglass, postgraduated two-year courses from optical fibre technology and optical appar. construction; (1980-1999);
7. **Summary of professional, business, administrative and community activities:**
 - **Director of department** (junior undersecretary of state) in the Ministry of National Education and office of the Prime Minister 1989-1990;
 - **Founder of Fiber Optics Lab. in Biaglass Glass Works** and Bialystok Univ. of Techn.; permanent Ind. Cons. of national fiberoptics industry, since 1980;
 - **Co-organizer of 20 nat conf.,** Optical Fibres and Applicat., (since 1976), Non-Telecom Opt.Fibres; Founder of IEEE-SPIE Photonics and Web Engineering symposium in WILGA (two times a year since 1996, now international), Commissary of Nat. Metrology Ind. Exhibit;
 - **Chair of 30 research projects,** domestic and internat., chief researcher in a few Nat.Res.Comm. grants; participant in UE FP6;
 - **Co-founder of Consortium „Polish Optoelectronics”,** gathering Center of Technology Transfer WUT, ITME, ITE, IOSTO institutes and private firms;
 - **Co-founder of „International Optoelectronics Foundation”,** vice-president of the board (89-94), memb. of the exec. board;
 - **Permanent co-worker of CERN/Geneva and DESY/Hamburg,** initiator of agreement of WUT and these institutes, organizer of WUT labs at these institutes, Chair of WUT TESLA lab at DESY and WUT Lab on Electronics for CMS/LHC in CERN;
 - **Co-Organizer:** Warsaw Science Festival, Days of open doors at WUT, Internet Photonics.Inform Centre in Poland;
8. **Summary of research position**
 - **Memb. M.Sc. Pol.Acad.Sci.:** memb. Sect. Optoelectronics Com.Electr. and Telecom, PAS; 1976-2003 (Scientific Secretary 1976-1990);
 - **Memb. Progr.Comm.,** domest. and internat. conferences (since 1980, together 40): General Assembly of European Optical Society, Europ.Conf.on Optical Sensors – Europtrode, Optical Fibres and Their Appl. (since 1979), Non-Telecom Opt.Fibres, Optoelectronic Measurements; Nat.School of Optoelectronics of PAS; Electron Technology, ELTE, Conf.Series of Pol.Chapter SPIE, Light-Metry SPIE, Optical Security SPIE;
 - **Memb. Progr.Comm. of Publ. Offices:** Laurin Publ.Photonics Spectra (MA, USA), Journ on Optical Sensors (London), Int. Journ.Optoelectronics (London), Fibre Optics & Systems Newsltt.(Boston, USA), Optoelectronics Review, Electronics;
 - **Memb of Progr.Comm of World Photonics Award:** „The Photonics Circle of Excellence”, USA (from 1991);
 - **President D.D.Eisenhower Fellow,** Philadelphia USA (from 1991) (www.eef.org);
 - **Memb of prof. societies,** funct. awards: Fellow SPIE (SPIE 30th Anniversary Award), Senior Member IEEE, memb.Opt.Soc.Amer., Elected Memb. of Laser Institute of America, found.memb.Europ.Optical Society, memb. SEP-Assoc.Pol.El.Eng. (gold and silver honorary diploma, prof.M.Pozarysk dipl., best publ. award., found memb and vice-chair of Pol.Comm.Optoelectronics; board memb.Inter-assoc.Com.Electr.Telecom of SEP-SIMP, registered expert of SEP in optoelectr., chartered eng., I^o i II^o NOT-MEN; board memb. IEEE Poland Section, IEEE Stud.Branch Counselor, IEEE Conf.org.; found.and board memb.of Poland Chapter SPIE; memb Pol.Club of FEANI engineers; Pol.Standards Comm., -memb Sub-com on Optical Fibres; memb.Pol.Physical Society (Optics Sect.); memb. Assoc. of Theor and Exper.Electrotechnics Soc., prof.J.Groszkowski diploma; Biographee Marquis World Who’s Who in Optical Engineering;

CV

Date and place of birth: 08.05 1952, Koźmin Wielkopolski, Poland

Private address: ul. Mickiewicza 74/21, 01-650 Warsaw

Employed: Warsaw University of Technology, ISE, ul. Nowowiejska 15/19, 00-665 Warsaw, Poland

Email: rrom@ise.pw.edu.pl; R.Romaniuk@iee.org; R.Romaniuk@spie.pl; web: <http://www.ise.pw.edu.pl/~rrom>

Tel: +48-22-660-79-86; +48-501-472-206

Nationality: Polish; citizenship: Polish

Civil status: married, one son

Studies and diplomas

1971 – 1976 – M.Sc. studies at Department of Electronics, Warsaw University of Technology (WUT);

1976 – M.Sc. El. Eng diploma; specialization Electronic Systems

1976 – 1980 – Ph.D. studies at WUT;

1980 – Ph.D. diploma in Electronic Engineering; Ph.D. thesis: Analysis of dispersion in optical fibre, 1980, tutor prof. Adam K. Smoliński;

1985 – Diploma of Registered Expert of Association of Polish Electrical Engineers (SEP) in Electronics and Telecommunications;

1987 – Diploma of Chartered (Professional) Engineer of I^o issued by the Ministry of National Education (MEN) and Federation of National Engineering Associations (NOT);

1987 – IEEE Senior Member; (#08294688)

1989 – Diploma of Chartered Engineer of II^o issued by the Ministry of National Education (MEN) and Federation of National Engineering Societies (NOT);

1993 – SPIE Fellow; (#00062288)

1995 – Diploma and Registered FEANI Title of European Engineer (Eur. Ing.) (www.feani.org), (Paris and Brussels);

2002 – D.Sc., „Studies on Tailored Optical Fibres”, Warsaw University of Technology, Warsaw, Poland;

Languages

English and Russian – actively; German – actively some time ago, now passively

Course of professional work

- Since 1976 Ph.D. studies in the Institute of Electronics Fundamentals at WUT [www.ise.pw.edu.pl], with the late prof. Adam Smolinski as a tutor. In 1980 awarded with a Ph.D. Short fellowships at Technische Hochschule in Magdeburg (Germany) and Humboldt University in Berlin;
- Since 1980 till now in the Institute of Electronic Systems of WUT as Assistant Prof. and Adjunct Professor.
- Since 1978 permanent cooperation with Fiberoptics Department at Biaglass Glass Works, Białystok Univ. of Technology, Department of Glass and Ceramics of ITME-CEMAT (Inst. of Electronics Materials Technology) [www.itme.edu.pl] and Lab. of Optical Fibre Technology of Maria Curie Skłodowska Univ. in Lublin.
- Since 1980 Industrial Adviser to the National Fiberoptics Industries; Three years of industrial practice including R&D transition to manufacturing; Manufacturing management; Co-founder of new Hi-Tech production department at Białystok Hi-Tech Industrial Area;
- Since 1982 Advisor to the Ministry of Communications and National Hi-Tech Industries;
- During 1980-81 professional fellowship in the UK (King's College in London, Uni. of Southampton, BTRL Ipswich, BICC London). Novel communications technologies; Management and marketing of communications services and networks; Hi-Tech services sales management; Corporate organization; Social communications; Professional communications hardware and software;
- During 1976-1999 function of Scientific Secretary of the Section of Optoelectronics in the Committee of Electronics and Telecommunications of the Polish Academy of Sciences. Founding member of the Polish Optoelectronics Committee of Association of Polish Electrical Engineers [www.sep.com.pl].
- During 1989-90 I was nominated (with the change of the political system in Poland) to the position of the director of department (Agency) at the National Ministry of Education and Office of the Prime Minister. Director of Governmental Agency “Task Force on the EC – Human Resources Management and Training (HRM)”, offices in Warsaw and Brussels, reporting to the Parliament and Economic Commission of the Minister's Council; Among others responsible for receiving, selling and realization of aid/assistance programmes at the level of multimillion US\$; with the participation of international partners; Government delegate to the European Commission on Human Resources Management; Hi-Tech., and Services Sector Development and Training; Chair or Executive of bilateral HRM commissions with Germany, Sweden, France; Majority of these programmes concerned continuous training of engineers, the development of private sector in Poland and shift of the relevant workforce to the Hi-Tech. and services sector; A considerable number of the programmes concerned development of a modern market economy in this country; I was regularly informing press and other mass-media about the activities of the Agency, through the organization of nation wide press conferences and briefings. In this domain I also cooperated with the chief governmental spokesperson.

- In 1991 I was in the USA as the prestigious President D.D. Eisenhower Fellow (www.eef.org) and visited together a few tens of American universities, research institutions, and professional organizations like IEEE Headquarters in Piscataway, OSA Headquarters in Washington DC, LIA Headquarters in Orlando FL, AIS, AAS and SPIE Headquarters in Bellingham WA, industrial associations like EIA, AEA (Washington DC) and federal organizations like Communications Commission (Washington DC). The subject of the Fellowship was: private Hi-Tech engineering business management; entrepreneurship, contemporary and future corporate environment, impact of Hi-Tech developments on private sector, Hi-Tech originating services sales; corporate sales technologies and strategies; communications, technology commercialization. Visited and studied at: Kodak, Polaroid, AT&T, Bellcore, Bell Atlantic, Boeing, FCC, NTIA, NIST, NSF, NAE, OSTP, DoC's Bureau of Communications, DoC's Technology Administration, CRS, The World Bank, some US consulting and investment agencies, several industrial and market associations (AEA, EIA).
- Since 1992 adviser to international investment business, Freelance adviser to international institutions (The World Bank and others); Vice-President of International Optoelectronics Foundation; Vice-President of the Polish Optoelectronics Committee, Principal shareholder and and Exec. in a few companies working in the field of advanced technology; Chair and member of a few private business commissions; Member of Editorial Boards of international professional journals and program committees of international business and industrial conferences;

Present research directions and past research experience

Optoelectronics, Optical fibre technology, Optoelectronic materials, Optical fibre sensors, Optical fibre communications, Optical Terabit Internet, Distributed measurement systems, Electronic and optoelectronic systems for high energy physics experiments; Internet and web engineering; FPGA/VHDL, Hybrid VLSI optoelectronic integration; Complex instrumentation Systems; Electronics Industry Management;

Individual contributions as an engineer and a scientist (Technical Accomplishment) (year and major publication)

- co-inventor of new instrumentation methods for applications of optical fiber subminiature probes in biology for micro-illumination purposes (1977/78); [VI-2]
- co-discoverer of some relaxation and bleaching mechanisms in radiation hardened optical fibers pulled from multicomponent and doped glasses (1979); [VI-3];
- inventor of some novel ultrapure compound glass compositions for radiation hardened optical fibers for instrumentation purposes (1980, 1981, 1982, 1983); [I-30];
- inventor of new instrumentation methods in optical fiber dosimetry; (1982) [I-17];
- inventor of new instrumentation methods for military applications of optical fibers (1984); [VI-3];
- inventor of Multicrucible Zone Diaphragm (MZD) technology of soft-glass optical fibers for instrumentation purposes (1985); [I-16, II-11];
- principal co-inventor of Modified Multicrucible technology (MMC) of optical fibers (1984); [II-20, VIII-17,20];
- inventor of Mosaic Assembling Technology (MAT) of tailored optical fibers (1986), [I-67]
- co-inventor of several new constructions of sub-miniature optical fiber imageguides of the ultimate resolution (1988), [III-90, III-123]
- co-inventor of Multicore Optical Fibers made by hybrid MMC technology (1983), [II-4, II-16, II-61];
- inventor of a few new families of tailored optical fibers with shaped cores in terms of refraction, geometry and thermo-mechanical properties (1980-90), [IV-10]
- inventor of novel method of signal transmission in singlemode Multicore Optical Fibers, called Core Division Multiplexing (CDM), per analogiam to WDM; demonstration of this method at ECOC 1984 in Stuttgart; [II-7, IV-23];
- co-inventor of novel glass compositions for sensitized optical fibers and desensitized optical fibers for instrumentation purposes (1985-1990); [II-36];
- inventor of glass-ceramic optical fibers family for sensors and instrumentation (1988-1992), [II-42];
- co-inventor of hybrid MAT-MMC technology of manufacturing of photonic optical fibers (1999) [III-157];
- designer of numerable new solutions of optoelectronic instrumentation equipment for non-telecom applications, including: couplers [I-47, II-44, III-51], WDM devices [III-93, III-94, III-97, III-167], GRIN lenses [II-37]
- constructor of novel solutions of optical fiber sensors [II-39, II-41];
- applied to practice several proprietary designs of optoelectronic instrumentation systems for industry, including: optoelectronic fire alarm systems for furniture industry (large savings) [III-81], hospitals [III-59, III-66], ships [II-21], biological reactor for albumen production [III-84]
- introduced to manufacturing several novel solutions of: optical fibers, optical fiber components, devices and subsystems [II-52, II-54];
- developer of a few industrial research and manufacturing laboratories for optoelectronic and fiberoptic instrumentation (since 1980), [II-52];
- inventor of novel constructions of hybrid optical telemetric networks (1992-2002), [II-71];

- applied to practice novel, cheap solutions of HOST-Hybrid Optoelectronic Telemetric Networks on contractor premises: Zielonka Community near Warsaw, Institute of Meteorology and Water Management in Warsaw, Warsaw Municipal Water and Sewage Company, CERN (Geneva) and DESY (Hamburg) Institutes [VI-49]; (1995-2003);
- major co-inventor of novel methods of FPGA immunization against ionizing radiation SEU and permanent effects (2002), [II-23, VI-67];
- principal co-designer of new generation of Low Level Control and Simulation System (LLRF) for international TESLA Project (X-Ray FEL-Free Electron Laser and superconducting linac in DESY, Hamburg [II-94, IV-94, IV-95]; http://tesla.desy.de/new_pages/TESLA/TTFnot03.html
- author and principal co-author of more than 550 scientific and technical publications and presentations including: several monographic books and manuals, several monographic chapters, more than 50 peer-reviewed papers in journals; about 70 papers in Proc.SPIE;

Teaching

Lectures, laboratories, experiments, seminars, conversatoria at the Faculty of Electronics and Information Technologies of WUT, since 1975. Subjects: Electronic circuits, Foundations of Electrical Metrology, Electronic Metrology, Laboratory of Foundations of Electrical Metrology, Laboratory of Electronic Metrology, Laboratory of Circuit Theory, Laboratory of Electronic Circuits, Microwave Technology and Technique, Microwave Laboratory, Optoelectronics, Optoelectronic components, Optoelectronic metrology, Fundamentals of optical fibre technology, Optical fibre communications. I was a tutor for over 70 B.Sc.E.E. and M.Sc.E.E. students and 5 Ph.D. students in advanced measuring systems, professional Internet technologies and photonics. I organized, till now, more than 20, research conferences for M.Sc. and Ph.D. students as well as young researchers from industry and business, under the patronage of the IEEE, SPIE and WUT. I organized at my institute (ISE) in 1995, the M.Sc./Ph.D. Students Research Group PERG – Photonics and Web Engineering Res.Gr. Now the Group has more than 40 members. (<http://nms.ise.pw.edu.pl>, <http://pergx.ise.pw.edu.pl>. X=1,2,3...). In 2002 a second Group was formed ELHEP – The Electronics for High Energy Physics Experiments Res. Group. I had lectures for PERG and ELHEP in: advanced presentation methods of research results, internat. laboratory work techniques, how to write a scientific paper and research report, etc. Considerable advances of PERG and ELHEP laboratories are the best proof of the efficiency of the common res. work. PERG and ELHEP students have published recently a few tens of papers in journals and had numerable presentations at the conferences.

Thesis Supervision (work recently done in PERG Laboratory)

- A.Dybko, Optical Fiber pH Sensor, M.Sc. thesis, FE&IT WUT, 1991;
- A.Dybko, Optical Fiber pH Metry, Ph.D. thesis, co-supervisor/tutor with J.Helsztynski, FE&IT WUT, (December 1996);
- K. Poźniak, Fast Topological and Time Analysis of Collisions of Highly Energetic Protons with Residual Gas and Pipe Walls at Hera Accelerator for Zeus Experiment, Ph.D. thesis, Faculty of Electronics and Information Technologies, Warsaw University of Technology (FE&IT WUT), (September 1999); thesis consultant and co-tutor with J.Helsztynski;
- R.G.Bielicki, Internet Metrological Station - software, .M. Sc. thesis (joint supervision with K.Poźniak), FE&IT WUT, 1999;
- L.J. Bobiński, Internet Metrological Station - hardware, M.Sc. thesis, (joint supervision with K.Poźniak), FE&IT WUT, 1999;
- P.Foryt, Circuits for Synchronous Data Compressors and Decompressors from RPC Chambers for International High Energy Physics CMS Experiment at CERN in Geneva, M.Sc. thesis, (joint supervision with K.Poźniak), FE&IT WUT, 1999;
- G.Kielpiński, Internet Information System for Students Research Group, M.Sc. thesis, FE&IT WUT, 1999;
- I.Kopeć, SQL Database Server for Meteorological WWW Server, M.Sc. thesis, FE&IT WUT, 1999;
- J.Wolski, Microchemical Test System, M.Sc. thesis, joint supervision with A.Dybko; FE&IT WUT, 1999;
- T.Jeżyński, Logical, Physical and Software Layers for management of a Remote Metrological Station with a Modem, B.Sc. thesis; FE&IT WUT, 1999;
- B.Spychalski, Software in BridgeView and LabView for Merological Server; B.Sc. thesis, joint supervision with K.Poźniak, FE&IT WUT, 1999;
- M.Woźnica, Network Connections and Software for Dissipated Measuring Nodes, B.Sc. thesis, joint supervision with K.Poźniak, FE&IT WUT, 1999;
- T.Czyżew, Integrated BER Measuring System for the Optical Fiber Digital Transmission Channel for the CMS Experiment at CERN in Geneva, M.Sc. thesis, Joint supervision with K.Poźniak, FE&IT WUT, 2000;
- T.Nakielski, Integrated Diagnostic System for Resistive Plate Chamber Muon Trigger in Compact Mon Solenoid Experiment, M.Sc. thesis, FE&IT WUT, 2000;

- T. Toczewski, Institute Internet Information System – Organization and Management, M.Sc. thesis, FE&IT WUT, 2000;
- H. Bielecki, Measuring Data Visualization from Meteo Server in WWW Environment, B.Sc. thesis, joint supervision with K. Poźniak, FE&IT WUT, 2000;
- A. Zareba, Virtual Modules Simulating Chemical Experiments, B.Sc. thesis, joint supervision with A. Dybko, FE&IT WUT, 2000;
- T. Jeżyński, Diagnostic System for BAC Detector in the ZEUS Experiment, M.Sc. thesis, joint supervision with K. Poźniak, FE&IT WUT, 2001;
- A. K. Kuliński, Design of Internet Application Basing on ISP and Oracle 8 Data Base, M.Sc. thesis, FE&IT WUT, 2001;
- Z. S. Łuszczak, Internet Metrological System in Linux Environment, M.Sc. thesis, joint supervision with K. Poźniak, FE&IT WUT, 2001;
- P. M. Bodzan, Organization of Institute WWW Workshop on the basis of PERG Research Group, B.Sc. thesis, joint supervision with K. Poźniak, FE&IT WUT, 2001;
- A. J. Bury, Script Languages Used for Design of WWW Service for a Research Group, B.Sc. thesis, joint supervision with K. Poźniak, FE&IT WUT, 2001;
- D. Górczyński, Data Aging and Archiving in Metrological Data Bases, B.Sc. thesis, joint supervision with K. Poźniak, FE&IT WUT, 2001;
- G. Janicki, Sorting Algorithm Analysis with the Aid of FPGA Circuits – Altera and Xilinx, B.Sc. thesis, joint supervision with K. Poźniak, FE&IT WUT, 2001;
- W. Koprek, Software for Digital Frequency Meter FC-7015U, B.Sc. thesis, joint supervision with K. Poźniak, FE&IT WUT, 2001;
- T. Kowal, WWW Services Design for Research Group Using Script Language, B.Sc. thesis, joint supervision with K. Poźniak, FE&IT WUT, 2001;
- A. Łoboda, GSM Network in Dissipated Measurement and Control Systems: Data Transmission Via the SMS System, B.Sc. thesis, joint supervision with K. Poźniak, FE&IT WUT, 2001;
- A. Orzełowski, Internet Work Offers for the Students of Faculty of Electronics And Information Technologies, B.Sc. thesis, joint supervision with K. Poźniak, FE&IT WUT, 2001;
- A. P. Szamocki, Multimedia Programming for WWW Camera Servers, B.Sc. thesis, joint supervision with K. Poźniak, FE&IT WUT, 2001;
- P. Świdorski, Software for Metrological Server basing on Java; B.Sc. thesis, joint supervision with K. Poźniak, FE&IT WUT, 2001;
- W. Bieryło, Internet Applications – Design with PHP Language and Oracle Database Management System, M.Sc. thesis, FE&IT WUT, 2002;
- Grzegorz Bigos, Distributed Diagnostic Software System Interfaces Model and its JAVA Implementation for BAC Calorimeter in ZEUS Experiment in DESY Hamburg, M.Sc. thesis, joint supervision with K. Poźniak, FE&IT WUT, 2002;
- Marcin Kuthan, “Content Management System for Internet Measurement System of BAC Calorimeter in ZEUS Experiment at DESY in Hamburg”, M.Sc. thesis, FE&IT WUT, 2002;
- B. Lula, “Directory Model of Searching for Knowledge in the Internet”, M.Sc. thesis, FE&IT WUT, 2002;
- Piotr Rutkowski, “Testing System Model Based on JTAG for Resistive Plate Chamber Muon Trigger in Compact Muon Solenoid Experiment at Large Hadron Collider Accelerator in CERN Geneva”, joint supervision with K. Poźniak, M.Sc. thesis, FE&IT WUT, 2002;
- A. Sałański, “Internet Metrological Server for Local Community”, M.Sc. thesis, FE&IT WUT, 2002;
- M. Wójtowicz, “XML for Data Processing in Internet Metrological Systems”, M.Sc. thesis, FE&IT WUT, 2002;
- A. Zareba, “Automatic Measurement System for Testing Ion Selective Electrodes”, joint supervision with A. Dybko, M.Sc. thesis, FE&IT WUT, 2002;
- Mariusz Ptak, “Creation of an Application for Measurement System Controlled through the USB Bus with LabView Development Environment”, B.Sc. thesis, FE&IT WUT, 2002;
- Marcin Bartoszek, “Diagnostics of Distributed, Measurement and Instrumentation Systems with the Aid of Embedded Techniques”, M.Sc. thesis, FE&IT WUT 2003;
- Artur Gierej, "Internet Visualization System for the Structure and State of Electronics of BAC detector in ZEUS experiment (DESY, Hamburg)", M.Sc. thesis, joint supervision with K. Poźniak, FE&IT WUT, 2003;
- Bogdan Rokicki, “OKNO – Distant Learning System for WUT: Subject Data Base; M.Sc. thesis, FE&IT WUT 2003;
- Przemysław Swietochowski: "OKNO – Distant Learning System for WUT: System Management Panel", M.Sc. thesis, FE&IT WUT 2003;
- Przemysław Szamocki, "Automatic magnitude measurements for changing stars with a CCD camera; M.Sc. thesis; joint supervision with G. Wrochna (Inst. For Nuclear Studies) and K. Poźniak, FE&IT WUT 2003;

- Adam Grodecki: "Design and tests of an application for archiving and presentation purposes for Slow Control System of BAC calorimeter in ZEUS Experiment (DESY, Hamburg)", B.Sc. thesis, joint supervision with K.Poźniak, FE&IT WUT 2003;
- Arkadiusz Kalicki: "Sky Eye – software for observations and astronomic measurements", B.Sc. thesis, Joint supervision with G.Wrochna (Inst. For Nuclear Studies, Warsaw) and K.Poźniak, FE&IT WUT 2003;
- Piotr Pucyk: "Internet Information Service for M.Sc and Ph.D students PERG Research Group", B.Sc. thesis, joint supervision with K.Poźniak, FE&IT WUT 2003;
- Dominik Konrad Rybka: "Realization, in VHDL language, radiation hard modules for CMS Experiment in CERN Geneva", B.Sc. thesis, joint supervision with K.Poźniak, FE&IT WUT 2003;
- Marcin Stepień, Data Base Application dynamically imaging the state of metrological server – software layer", joint supervision with K.Poźniak, B.Sc. thesis, FE&IT WUT 2003;
- Marcin Wojtaś, Data Base Application dynamically imaging the state of metrological server – hardware layer", joint supervision with K.Poźniak, B.Sc. thesis, FE&IT WUT 2003;
- Daniel Wiącek, GIS based measurement system; B.Sc thesis, FE&IT WUT, 2003;
- Mariusz Olbryś, Virtual Measurement Unit – Internet Access", B.Sc. thesis, FE&IT WUT 2003;
- Łukasz Walczyk, "Web Server for Electronics Monthly Journal, part I", B.Sc. thesis, FE&IT WUT, 2003;
- Piotr Zdonek, "Web Server for Electronics Monthly Journal, part II", B.Sc. thesis, FE&IT WUT, 2003;
- Michał Zaczek, Data acquisition and monitoring software for BAC/Zeus detector cooperating with ADAMO database, DESY, Hamburg", B.Sc. thesis, joint supervision with K.Poźniak, FE&IT WUT 2003;
- M.Ptak, Investigation of optical multigigabit data transmission system for RPC Muon Trigger, M.Sc. thesis, joint supervision with K.Poźniak, FE&IT WUT expected in 2004;
- Daniel Wiącek: "GIS-based database, interactive monitoring system of electronics for RPC Muon Trigger at CMS experiment in CERN Geneva", M.Sc. thesis, joint supervision with K.Poźniak, FE&IT WUT, expected in 2004;
- Łukasz Walczyk, "Customer Relation management System for electronic and classical professional journal – service reliability aspects", M.Sc. thesis, expected in 2004;
- Piotr Zdonek, "Customer Relation management System for electronic and classical professional journal – information flow as function of time", M.Sc. thesis, expected in 2004;
- Grzegorz Kasproicz, "Cheap professional CCD camera design for astronomical observations", M.Sc. thesis, joint supervision with G.Wrochna (Inst. For Nuclear Studies, Warsaw) and K.Poźniak, FE&IT WUT, expected in 2004;
- Waldemar Koprek, "e-Institute, part I, M.Sc. thesis, joint supervision with K.Poźniak, FE&IT WUT, expected in 2004;
- Andrzej Orzełowski, "e-Institute, part II, M.Sc. thesis, joint supervision with K.Poźniak, FE&IT WUT, expected in 2004;
- Jarosław Bury, "e-Institute, part III, M.Sc. thesis, joint supervision with K.Poźniak, FE&IT WUT, expected in 2004;
- Marcin Bodzan, "e-Institute, part IV, M.Sc. thesis, joint supervision with K.Poźniak, FE&IT WUT, expected in 2004;
- Maciej Dąbrowski, "e-Institute, part V, M.Sc. thesis, joint supervision with K.Poźniak, FE&IT WUT, expected in 2004;
- Marcin Wojtaś, "e-Institute, part VI, M.Sc. thesis, joint supervision with K.Poźniak, FE&IT WUT, expected in 2004;
- Marcin Stepień, "e-Institute, part VII, M.Sc. thesis, joint supervision with K.Poźniak, FE&IT WUT, expected in 2004;
- Tomasz Jeżyński, Diagnostic Layer Middleware System for BAC Calorimeter at ZEUS Detector, Ph.D. thesis, (expected September 2004);
- Cezary Kaczmarek, Soliton Pulses in Highly Birefringent Optical Fibers; Ph.D. thesis, FE&IT WUT, (expected September 2004);
- Tomasz Czarski, Analysis of Superconducting Niobium Cavity Control and Simulation System for TESLA X-Ray Free Electron Laser, Ph.D. thesis, FE&IT WUT, (expected December 2004);
- Rafał Sałański, Satellite triggering software for the Pi-of-the-sky experiment of optical flashes observations accompanying Gamma Ray Bursts of the Whole Sky, Ph.D. thesis, FE&IT WUT, expected in December 2004;
- Piotr Rutkowski, Diagnostics and Data Quality Management for LLRF TESLA Project, Ph.D. thesis, FE&IT WUT, expected during 2004;

Seminars and Lectures

Research seminars at Warsaw University of Technology (WUT)

Institute of Radioelectronics, Institute of Telecommunication (2),
Faculty of Environment Engineering (3), Faculty of Electrical Engineering,

Institute of Aviation Technology and Applied Mechanics,
IPE/ISE at the Faculty of Electronics and Inf. Technology. (FE&IT WUT) (25)
IEEE Seminars at the Faculty of Electronics, Warsaw University of Technology (5)

Invited lectures (domestic) (chosen)

Institute of Meteorology and Water Management (IMIWI), Warsaw, Poland (2)
Research-Manufacturing Department of Optical Fibre Technology, Biaglass Glass Works, Białystok, Poland (10)
Department of Electrical Engineering, Białystok University of Technology, Białystok, Poland (5)
Faculty of Chemistry, University of Maria Curie Skłodowska (UMCS), Lublin, Poland (3)
Institute of Dendrology, Polish Academy of Sciences, Kórnik, Poland (2)
Technical Institute of Military Aviation (ITWL), Warsaw, Poland
Military Institute of Communications, Zegrze near Warsaw, Institute of Communications, Warsaw, Miedzeszyn (3)
Institute of Automation of Electrical Power Systems (IASE), Wrocław
Military Academy of Technology, Warsaw (3)
Federation of Engineering Organizations, (NOT), Warsaw (3), NOT Katowice,
Plenary Meetings of Polish Optoelectronics Committee of SEP (4)
Section of Optoelectronics, Committee of Electronics and Telecommunications, Polish Academy of Sciences, (3)
Mikołaj Kopernik Society, National Museum of Engineering and Technology in Warsaw;
Academy of Medicine in Warsaw, Opole Technical University, Łódź Technical University,
House of Engineering NOT, Katowice and Białystok
Regional Management Directorate of Electrical Power Distribution, Bielsko-Biała;
Silesian University of Technology
IEEE Poland Section, NOT (5),
Institute of Fundamental Problems of Engineering and Technology, Polish Academy of Sciences (PAS)
Committee of Biomedical Engineering of SEP and NOT (2),
Advisory Board to the Minister of Communications (2),
Ministry of National Defence, Office of Development and Electronics Research;
Section of Experimental Mechanics, Committee of Mechanics, Polish Academy of Sciences;

Invited lectures (international) (chosen)

University of Stuttgart, invited lecture combined with the ECOC 1984 Conference, West Germany,
Humboldt University zu Berlin, Institute of Physics, East Germany
University of Southampton, UK,
British Telecom Research Laboratories, Ipswich, UK,
BICC, Londyn, Taylor and Francis, Londyn, UK,
During the stay in the USA as the President D.D. Eisenhower Fellow in 1991 I visited and gave a number of lectures at the following universities and institutions: (The lectures concerned the following range of topics: optical fibre sensors, manufacturing of specialty microstructured optical fibres, photonics, development of optoelectronics in Poland), Massachusetts Institute of Technology (Boston), California Institute of Technology (Los Angeles, San Francisco, Berkeley, San Diego), Rutgers University, Laser Institute of America (Orlando, FL), Optical Society of America (Washington, DC), University of Washington (Bellingham, WA), FCC (Federal Communication Commission) Washington DC, NSF Washington DC, Laurin Publishing Photonics Spectra and Photonics Directory Editors NJ, CREOL Uni. of Florida Orlando, Uni. of Texas - Austin, IEEE Headquarters – Piscataway NJ, Drexel Uni. Philadelphia, Rochester Institute of Technology NY, SPIE Headquarters Bellingham WA, Eastman Kodak Factory at Rochester NY, Bellcore at Red Bank (now Lucent), BT&T Laboratories (Holmdel, Crawford Hill, Murray Hill, Morristown, NJ), and others.

Invited papers at the conferences (chosen)

National Conference of Robotics, Wrocław University of Technology;
National Schools of Optoelectronics by PAS (7)
National Conferences on Optical Fibres and Their Applications (4)
SPIE Conference on Optical Fibre Technology in Cambridge/Boston (2)
SPIE Optoelectronics Congress in San Diego (2)
International School on Optoelectronics, Bukareszt-Magurele, Institute of Physics, Romania
International School on Optoelectronics, Jena, Institute of Physics and Jenaer Glass Werke, East Germany
International School on Optoelectronics, Great Rostow near Moscow, Russia

Individual contributions as an Educator

- Developer of broad continuous training programmes (curricula) for engineers in cooperation with the industry in area of photonics, fiberoptics, optoelectronics and instrumentation engineering (since 1982); and especially during the political transformation period in Poland (1989-1992);

- Major participant in continuous engineering education programmes, trained more than 500 engineers in close cooperation between the academia and industry, since 1978;
- One of major initiators of establishing of industry based, inter-university large, universal, measurement laboratory for optoelectronic instrumentation and quality assessment (since 1978) in Glass Works Bialystok and next Glass Works Biaglass in cooperation with Bialystok University of Technology and WUT;
- Organizer of strong international cooperation within the EU and with the USA in continuing education programmes for engineers, during the political transformation period in Poland (1989-1992);
- Promoter of more than 70 B.Sc., M.Sc and Ph.D. in electronics and photonics engineering, since 1978;
- Contributor toward electronics engineering curricula development within the national engineering associations like: SEP-The Association of Polish Electrical Engineers, IEEE Poland Section, SPIE Poland Chapter, Polish Physical Society, Polish Cybernetics Society, Polish Optoelectronics Committee, Polish Academy of Sciences;
- Developer of completely new, for this country, curricula for Ph.D. students in international laboratories in this geographical region (Institute of Physics, Helsinki, Finland; University of Bari, Italy; CERN, Geneva, DESY, Hamburg); Optoelectronics and Instrumentation Engineering; These curricula attracted tens of gifted people to newly created PERG and ELHEP laboratories;
- Organizer of Ph.D. student laboratory for advanced electronic and photonic instrumentation systems working for the 6th European Framework Programme, within the ESGARD (European Steering Group for Accelerator Research and Development) field; CARE Program – Coordinated Accelerator Research over Europe;
- Author of several manuals and laboratory booklets for M.Sc. and Ph.D. students in Photonics and Internet technologies;
- Initiator and main organizer of international Symposia for students under the wings of international institutes like IEEE and SPIE, (since 1995); Together in these events took part more than 2500 students, 2000 domestic and 500 international, mainly from the IEEE R8;

List of publications and research work - summary

Publications and research work	<i>Before Ph.D.</i>	<i>Before D.Sc.</i>	<i>After D.Sc.</i>	<i>Together</i>	<i>Bibliography #</i>
Domestic refereed journals	0	83	9	92	I
International journals	0	68	24	92	II
Domestic conferences and invited lectures	28	149	10	187	III
International conferences	0	94	3	97	IV
Books, chapters in books, editorships	0	25	5	30	V
Research reports	2	58	5	65	VI
Patents and other publications	0/0	1/27	0/3	1/30	VII

Service to the Community and Other Research Activity

Membership in Programme Committees of professional journals

- ❑ International Journal of Optical Sensors, King's College, London 1986-1988
- ❑ International Journal of Optoelectronics, Taylor and Francis, London 1988-1994; Guest Editor, Special Issue: Papers from Poland Vol. 4, Nos. 3/4, 05/06.1989;
- ❑ FOS² – Fiber Optics Sensors and Systems Newsletter, Boston MA, Information Gatekeepers, (since 1987)
- ❑ Opto-Electronics Review, co-founder of the journal (Philadelphia list of refereed journals, since March 2000); Guest Editor, Special Issue on Optical Waveguide Technology, no 2/2000;
- ❑ Photonics Spectra Magazine, Photonics Spectra Directory, Laurin Publishing, MA, USA, since 1991
- ❑ Editor of SPIE Poland Chapter series of Proceedings, since 1986 10 Vols, 2 next vols. in preparation
- ❑ Bulletin of SPIE Poland Chapter, Editor (1988-1994),
- ❑ Electronics, Journal of SEP, Warsaw, since 2001
- ❑ Elektronization Journal of SEP, Warsaw, since 2002 (permanent co-worker)

Membership in professional societies

- ❑ Section of Optoelectronics, Committee of Electronics and Telecommunications, Polish Academy of Sciences; since 1976, during 1976-1993 Section Scientific Secretary;
- ❑ Member of the Program Board of the Research-Production Department of Optical Fibre Technology of Glass Works Biaglass, 1981-2000
- ❑ Fellow SPIE – The International Society for Optical Engineering, Bellingham WA, USA, 14.07.1993; Member of SPIE since 1982;
- ❑ Poland Chapter of SPIE. Founding member and Board member, since 1986;
- ❑ Member of OSA – Optical Society of America, since 1986, (#25274)
- ❑ Vice-President and founding member of the Polish Optoelectronics Committee of SEP, since 1985

- ❑ IEEE Senior Member, since 1987; IEEE/LEOS Member since 1987, ComSoc member 2002-2003, IMS member, since 2004;
- ❑ Laser Institute of America (LIA), Orlando, FL, USA, member since 9/1991, (#2347)
- ❑ International Foundation of Optoelectronics, Founding Member, Vice-President (period 1991-1993);
- ❑ European Optical Society, founding member of EOS (12.03.1991), Member of the Program Committee of Annual EOS Meeting;
- ❑ Member of the Program Committee of International Industry Photonics Award “The Photonics Circle of Excellence Award”, Photonics Spectra, Laurin Publ., Pittsfield, MA, USA, since 1992;
- ❑ IEEE Poland Section, Board member, ExCom member since 1998;
- ❑ IEEE Student Branch Counselor, Warsaw University of Technology, since 1998;
- ❑ Member in Standardization Commission of Fiber Optics, Polish Standards Committee, since 1998
- ❑ Member of the Board, Inter-Association Committee of SEP and SIMP of Electronics, Informatics and Telecommunications, since 2002;

Chairing of sessions at the conferences

I chaired a few tens of sessions at the domestic and international conferences. Several times I was a moderator of panel discussions.

Memberships in Programme and Org. Committees of Conferences

- ❑ IV National Conference „Microwave Electronics of Solid State”, Gdańsk, 17-20.10.1977, member of the Conf. Organizing Committee, Co-editor of Conf Proceedings, IV volumes;
- ❑ I Nat. Symp. of PAS “Optical Fibres and Their Applications” Jabłonna 16-17.02.1976; memb. organizing comm.;
- ❑ II Nat. Symp. of PAS „Optical Fibres and Their Applications” Jabłonna 13-15.02.1979; Editor of Symp. Proceedings, 3 volumes;
- ❑ I Symposium „Measurement Techniques of Optical Fibres”, Lublin, 04-05.06.1981; Secretary of Conf. Program Committee;
- ❑ I Symposium PAS „Non-Telecommunication Optical Fibres”, Białystok-Białowieża, 23-25.09.1982, Member and Secretary of the Symp. Scientific Committee;
- ❑ III National Symposium of PAS „Optical Fibres and Their Applications”, Jabłonna 15-17.02.1983; Symp. Proceedings Editor, 5 volumes;
- ❑ I Nat. Symp. On „Laser Technology”, „STL’84”, Toruń, 25-27.06.1984, Co-Editor of Symp. Proceedings, 3 volumes;
- ❑ IV Nat. Symp. PAS, „Optical Fibres and Their Applications”, Warsaw, 11-13.02.1986, Symp. Scientific Secretary, Co-Editor of Symp. Proceedings, 3 volumes; Co-Editor of Proc. SPIE volume from this Symposium;
- ❑ Establishment of „Polish Group of SPIE Members” by SEP, 24.10.1986, Founding Member and Secretary of the SPIE Group in Poland; Editor of the SPIE Information Bulletin in Poland;
- ❑ II Nat. Symp. On „Laser Technology”, „STL’87”, Szczecin 7-10.09.1987, Member of the Organizing Committee, Co-Editor of Symposium Proceedings; Co-Editor of Proc. SPIE volume from this Symposium;
- ❑ Establishment by the SPIE Headquarters – The International Society for Optical Engineering, „Polish Chapter of SPIE”, Bellingham (WA, USA) - Warsaw, September 1988, Founding Member and Secretary of the Board of SPIE Poland Chapter; Editor of SPIE Poland Chapter Bulletin; (December 1988);
- ❑ V Nat. Symp. of PAS „Optical Fibres and Their Applications” Warsaw, 21-23.02.1989; Member of the Scientific Committee and Sci. Secretary of the Symp., Co-Editor of Symp. Proceedings, V volumes, Co-editor of Proc. SPIE vol. from this Symp.;
- ❑ II Nat. Conf. Of PAS „Optical Fibre Applications outsider Telecommunications”, Białowieża, 24-26.01.1990, Memb. Scientific Committee of the Conference;
- ❑ European Conference on Optics „ECO4”, Hague, Founding Member of EOS (European Optical Society), 12.03.1991; Memb. Of Program Committee of EOS Conference (period 1991-1996);
- ❑ Ist European Conference on Optical Chemical Sensors and Biosensors, „Europtrode I”, Graz, Austria, 12-16.04.1992, Member of Scientific Committee of Conference;
- ❑ VI National School of Optoelectronics on „Single Mode Optical Fibre Communications”, Waplewo, 1-5.06.1992, Member of the Scientific Committee of the School;
- ❑ International Conference of Microelectronics, Warsaw, 21-23.09.1992; Member of the Programme Committee of the Conference; Co-Editor of Conf. Proceedings; Proceedings of SPIE, Microelectronics’92, Vol. 1783;
- ❑ First Annual Meeting of European Optical Society, Universidad de Zaragoza, 6-9.07.1993; Member of the International Programme Committee;
- ❑ IInd European Conference on Optical Chemical Sensors and Biosensors „Europtrode II”, Firenze, Italy, 19-21.04.1994, Member of the Scientific Committee of the Conference;
- ❑ XI School of Optoelectronics of PAS, „Photonics In Information Processing”, Ustroń, 6-10.05.1986, Member of the Scientific Committee of the School;
- ❑ IV Nat. Conference „Technology and Applications of Lightguides”, Krasnobród, 17-19.10.1996, Member of the Scientific Committee of the Conference;

- ❑ 1st IEEE-PERG Joint Symposium on „Photonics and Web Engineering, Warsaw University of Technology, Faculty of Electronics and Information Technologies, Warsaw, 17 January 1998, Chairman of the Symposium Programme Committee; <http://nms.ise.pw.edu.pl/ieee/sympozja>;
- ❑ VI Conf. of PAS on „Optical Fibres and Their Applications”, Białowieża 22-24.01.1998; Member of the Scientific Committee of the Conference, Co-Editor of Conf. Proceedings, 2 volumes, 1 volume Proc. of SPIE;
- ❑ IInd IEEE-SPIE-PERG Joint Symposium on „Photonics and Web Engineering, Wilga, 15-17 May 1998, Chairman of the Symposium Programme Committee; <http://nms.ise.pw.edu.pl/ieee/sympozja>;
- ❑ IIIrd IEEE-SPIE Joint Symposium on „Photonics and Web Engineering, WUT, Warsaw, 23 January 1999, Chairman of the Symposium Programme Committee; <http://nms.ise.pw.edu.pl/ieee/sympozja>;
- ❑ IVth IEEE-SPIE Joint Symposium on „Photonics and Web Engineering, Wilga, 15-16 January 1999, Chairman of the Symposium Programme Committee; <http://nms.ise.pw.edu.pl/ieee/sympozja>, co-editor of Symp. Proceedings;
- ❑ VII Conf of PAS „Optical Fibres and Their Applications”, Krasnoblód, 14-16.10.1999; Member of the Scientific Committee of the Conference;
- ❑ II Symposium „Applications of Optical Fibre and Optoelectronic Sensors In Industry and Environment Protection”, Warsaw University of Technology, Photonics Engineering Programme, 07.12.1999; Member of the Scientific Committee of the Symposium;
- ❑ Vth IEEE-SPIE Joint Symposium on „Photonics and Web Engineering, Wilga, 15 January 2000, Chairman of the Symposium Programme Committee; <http://nms.ise.pw.edu.pl/ieee/sympozja>;
- ❑ VIth IEEE-SPIE Joint Symposium on „Photonics and Web Engineering, Wilga, 27-28 May 2000, Chairman of the Symposium Programme Committee; <http://nms.ise.pw.edu.pl/ieee/sympozja>, co-editor of Symp. Proceedings;
- ❑ II IEEE SB Congress, Eindhoven, The Netherlands, May 2000; Lecturer, IEEE SB Counselor Session moderator;
- ❑ VII Research Conference „Elektron Technology” ELTE 2000, Wrocław, Polanica Zdrój, 18-22.09.2000; Member of the Scientific Committee of the Conference;
- ❑ XIV School of Optoelectronics of PAS „Photonics In Information Processing”, Stare Jabłonki, October 2000; Member of the Scientific Committee of the School and Sci. Secretary;
- ❑ XV School of Optoelectronics of PAS „Broadband Optical Networks”, Rabka Zdrój, 29.05 – 2.06. 2000; Member of the Scientific Committee of the School, Invited Lecturer;
- ❑ VIIth IEEE-SPIE Joint Symposium on „Photonics and Web Engineering, Warsaw University of Technology, Faculty of Electronics and Information Technologies, 27 January 2001, Chairman of the Symposium Programme Committee; <http://nms.ise.pw.edu.pl/ieee/sympozja>, co-editor of Symp. proceedings;
- ❑ VIIIth IEEE-SPIE Joint Symposium on „Photonics and Web Engineering, Wilga, 25-27 May 2001, Chairman of the Symposium Programme Committee; <http://nms.ise.pw.edu.pl/ieee/sympozja>, co-editor of Symp. proceedings;
- ❑ Nat. Congress and Exhibition of Metrology, Warsaw, 24 – 27. 06 2001, Metrology Exhibition Director;
- ❑ XVI School of Optoelectronics of PAS, „Optoelectronic Metrology”, Zakopane, October 2001; Member of the Scientific Committee of the School, Invited Lecturer;
- ❑ IXth IEEE-SPIE Joint Symposium on „Photonics and Web Engineering, WUT FEandIT, 19 January 2002, Chairman of the Symposium Programme Committee; <http://nms.ise.pw.edu.pl/ieee/sympozja>;
- ❑ VIII Nat. Conf. PAS „Optical Fibres and Their Applications” Białowieża 23-26 January 2002, Member of the Scientific Committee of the Conference, Co-Editor of the Conf. Proceedings, 2 volumes, Proc. of SPIE;
- ❑ III IEEE SB/GOLD Congress of, Cair, Egipt, 30.04-6.05.2002, Lecturer, member of the Program Committee;
- ❑ Conf. of Poland Chapter SPIE „Metrology and Testing Techniques using Light”, Warsaw 14-16 maja 2002, memb. Of Scientific Committee of the Conference;
- ❑ Xth IEEE-SPIE Symp. on „Photonics and Web Engineering”, Wilga, Warsaw Univ. of Technology, 23-26 May 2002, Chair of the Symposium Editor of Symposium Proceedings, <http://nms.ise.pw.edu.pl/wilga>;
- ❑ CEEPUS Winter School „New Trends In Telecommunications”, Kielce, 25.11-6.12.2002, memb. of the Scientific Committee of the School;
- ❑ XIth IEEE-SPIE Joint Symposium on „Photonics and Web Engineering, Wilga, 15 January 2000, Chairman of the Symposium Programme Committee; <http://nms.ise.pw.edu.pl/ieee/sympozja>;
- ❑ II Nat. Conference on “Optoelectronics – Offer of Science for the Industry”, Consortium „Polish Optoelectronics”, Poznań, 11-12.06.2003, memb. of the Scientific Committee of the Conference;
- ❑ XIIth Joint IEEE-SPIE Symposium „Photonics and Web Engineering” and “Electronics for High Energy Physics Experiments”, WILGA 22-25.05.2003, Chair of the Symposium;
- ❑ IX Nat. Conf. PAS „Optical Fibres and Their Applications”, Krasnoblód, 9-11.10.2003, member of the Scientific Committee of the Conference;
- ❑ XIIIth IEEE-SPIE Joint Symposium on „Photonics and Web Engineering, Warsaw University of Technology, Faculty of Electronics and Information Technology, 24 January 2004, Chairman of the Symposium Programme Committee; <http://nms.ise.pw.edu.pl/ieee/sympozja>;
- ❑ XIVth Joint IEEE-SPIE Symp. “Photonics and Web Engineering” and “Electronics for High Energy Physics Experiments”, WILGA, 26-30 May 2004, Symposium Chair, Editor of Symposium proceedings;
- ❑ Conference on Integrated Optics – Theory and Practice, Silesian Technical University, Szczyrk 4-6 June 2004; memb. of the Scientific Committee of the Conference;

- ❑ Warsaw SPIE Congress on Optics and Optoelectronics (10 Conferences), Warsaw University of Technology, planned for 28.08-2.09.2005, Chair of Photonics Applications IV Conference and Member of the Sci. Com. of the Congress;
- ❑ IEEE Warsaw Instrumentation and Measurement Congress, planned for August/September 2007, member of the organizing and programme committees;

Scientific Honors and Awards

- ❑ III Award in the Association of Polish Electrical Engineers (SEP) competition for the best technical publication in SEP Journals, for the diploma of prof. M. Pożaryski; Warsaw, 1984
- ❑ Jubilee, 30th Anniversary Diploma of SPIE – The International Society for Optical Engineering, obtained during the Optical Fibre Sensors conference, San Diego CA USA 1985
- ❑ Biographee in the Who is Who in Optical Science and Engineering 1985, Who's Who in Science and Engineering 1994, 2000, Who's Who in the World 2000, Marquis Who's Who in America, Chicago;
- ❑ Silver Honorary Medal of the Association of Polish Electrical Engineers (SEP), Warsaw, 1987
- ❑ Honorary Medal of PTETiS In Memoriam of prof. Janusz Groszkowski, Warsaw, 1988
- ❑ Honorary Medal of Association of Polish Electrical Engineers (SEP) In memoriam of prof. Mieczysław Pożaryski, Warsaw, 1989
- ❑ Fellowship SPIE – The International Society for Optical Engineering (Bellingham, WA, USA), 1993
- ❑ Honorary Golden Medal of the Association of Polish Electrical Engineers (SEP), Warsaw 1999
- ❑ Warsaw University of Technology, Rector's Awards for Teaching : 1998, 2003

Individual contributions as a Technical Leader (Service to the Community)

- Active participant of political transformation in Poland in 1989 and earlier (responsibility in sector of engineering);
- One of the major contributors towards the development of market economy (sector of engineering and training of engineers) in Poland during the early stages of the transformation period (1989-92);
- Nominated to key governmental position during the political transformation period in Poland concerning human resources management and engineering training on a nation-wide scale in cooperation with the EU;
- Major contributor toward development of new structures for workforce re-training (in engineering) and continuous engineers training, as well as introduction of international standards in this area, during the political transformation period in Poland – done in close cooperation with the American Embassy in Poland and American Experts resident in Warsaw (1989-1992);
- Manager of multimillion US\$ funds for engineering training with partners from the EU, during the governmental position (1989-92);
- One of the major developers of fiberoptics industry in Poland (non-telecom and instrumentation areas, since 1975) [II-52,II-54,V-20];
- Co-organizer and lecturer of several nation-wide Schools of Optoelectronics, Polish Academy of Sciences (since 1982); These Schools are part of national continuous education curricula for engineers.
- Member of Programme Committees of numerable conferences – domestic and international (over 50, since 1980);
- Session Chair in numerable conferences domestic and international (more than 100, since 1980);
- Major co-organizer and organizer of numerable conferences – domestic and international (more than 20, since 1975);
- Member of Programme Boards and referee of Professional Journals – domestic and international (since 1982);
- Member of Professional Societies – domestic and international; (list included)
- Invited Speaker and Lecturer at numerable public professional meetings; (list included)
- Major Initiator of international MOU between Polish engineering associations and international ones, including Europtica, SEP, PTETiS, SPIE, IEEE;
- Co-Founder of new scientific societies in this country and internationally, including SPIE Poland Chapter;
- Permanent Research Adviser of National Photonics Industry, (since 1980);
- Co-founder of new photonics foundations and businesses in Poland including International Optoelectronics Foundation, Consortium of Polish Optoelectronics;
- Manager of several successful research teams which have realized more than 30 programs, since 1980, for aggregated funds reaching multimillion US\$; (what, in the conditions of this country is a huge amount of money indeed);
- Coordinator of Professional Community common activities on a nation-wide scale and internationally, including economic (establishing of research programs), political (lobbying and petitions to the government in the name of the engineering community),
- Technical leader of several nation-wide and international initiatives and undertakings, including engineering practices exchange within the EU countries, engineering students exchange programmes within the EU countries, curricula standardization via the accreditation processes (cooperation with IEEE and ABIT), etc,

Evidence of Technical Accomplishment

Technical Publications and Presentations:

I- National Journals, II- International Journals, III- National Conferences and Invited Lectures, IV- International Conferences, V- books, chapters in books, editorships, VI- Research Reports, VII- Patents, other publications, -, VIII- Practical applications of research projects;

I – National Journals

1981

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- ATT Bell Laboratories (Holmdel, Crawford Hill, Murray Hill, Morristown), Bellcore (obecnie Lucent) at Red Bank –NJ; Bell Atlantic at Arlington –VA; Eastman Kodak at Rochester NJ; 3M at Austin –TX and Minneapolis/Saint Paul; Boeing at Seattle -WA;

- Drexel Univ. at Philadelphia –PA; Univ. of Pennsylvania at Philadelphia; Univ. of Utah at Salt Lake City -UT; NJ Inst. of Technology at Newark –NJ ; Swarthmore College – PA; Rutgers University at Piscataway – NJ; Uni. Of Delaware at Newark –DE; Uni. Of Central Florida at Orlando –FL; Florida Inst. of Technology at Melbourne –FL; Univ. of Florida at Boca Raton; Tufts Univ. at Medford/Boston –MA; MIT at Boston; Northeastern Uni. at Boston; Rochester Institute of Technology at Rochester –NY; Univ. of Illinois at Chicago; Univ. of Texas at Austin; University of California (San Diego, San Francisco-Berkeley, Los Angeles); Univ. of Washington at Bellingham; Johns-Hopkins University at Washington DC; Georgetown Uni. at Washington DC; Carnegie-Mellon Univ. at Pittsburg –PA; Univ. of Pittsburg – PA; Univ. of Baltimore –MD; New York State Univ. at New York;

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VIII – Results of research applied in practice (chosen, the most important)

No	Subject, topic and date of report	Concise list of investigated subjects and application aspects	Form of practical results	Estimation of practical advantages Place of practical application	Participation and role of author
1	2	3	4	5	6
1	Properties of components of optical fiber communication system in adverse environments; Grant by Military Institute of Communications in Zegrze near Warsaw; Period of realization 1979-1984; Two Technical Reports, dated 1982, (160pp) and 1984, (160pp), issued by Institute of Electronics Fundamentals (IPE), Warsaw University of Technology (WUT);	The research started in 1976. That was the first research in this subject in this country and one of the first of this broad scope in the world. Resistance of optical fibers, optical cables, DELs, semiconductor LD, photodiodes to ionizing radiation from Co60, electron linac, X-Ray and gamma sources, adverse thermal conditions cooling and heating cycles combined with ionizing radiation, fiber and OE components relaxation and photobleaching. Comparative study of many different types of optical fibers for optical communications and instrumentation; Optical fibers manufactured in Poland by UMCS Laboratory in Lublin, ITME Warsaw, Bialystok Glass Works, and leading world vendors; Radiation hard optical fibers were looked for communications purposes. Radiation sensitive optical fibers were looked for instrumentation and sensing purposes. Developed new low-loss fiberoptic glass doped with cerium (yellowish in visible); Extended linearity regions (as function of dose) in some of sensing kinds of optical fibers;	Two Technical Reports for Military Institute of Communications in Zegrze, (2x160pp.); Publications (8), Technical data for communications optical fiber manufacturers – domestic and international. Invited Lecture for Military Chief of Development; Invited Lecture during ECOC 1984 in Stuttgart for American Military Representatives; Invited Lecture during SPIE congress in San Diego in 1985; Invited Lectures at some Fiber Optic manufacturers in the USA (proprietary); IEEE Poland Section invited presentation;	Developed new techniques of optical fiber investigations and quality assessment; Developed some new glasses for optical fibers ionizing radiation hardened and ionizing radiation sensitized; A few series of first optical fiber doseimeters were build and tested practically in military real-life applications; Results applied for building national optical fiber communications lines; Military applications; Adverse environments applications of optoelectronic instrumentation systems; A number of proprietary solutions of materials and fiber technologies for national fiberoptics industry, including Bialystok Glass Works; Two M.Sc. theses realized;	Leader of the team, Editor of technical reports, co-author of papers; Invited Lecturer; (70% of own participation);
2	Applications of optical fiber technology for the study of tree (and plant) physiology; Grant by the PAS Institute of Dendrology in Kórnik near Poznań; Period of realization: 1978-1980; Technical Report, dated 1980, (32 pages), issued by WUT;	Investigations of novel constructions of fiberoptic sub-miniature illuminating probes for pine and spruce buds; Design and construction of the illumination system; Design and construction of the illumination conditions measurement system in biological objects and inaccessible places within such objects;	Construction of fiberoptic illumination and illumination measurement system for practical applications in research over development of plants;	At that time it was a completely new method of the influence of various illumination conditions on the development of trees; Applied practically at the Institute of Dendrology of Polish Academy of Sciences in Kórnik;	Co-inventor of the new illumination method; Leader of a technical realization team; (50%)
3	Application of optical fiber technology in robotics	Complex investigations were carried out on theoretical foundations and practical aspects of	Technical Reports for robotics research	Development of a few models of specialized fiberoptic sensors and	Leader of a research team;

	systems; Own Research Grant of Warsaw Univ. Technology (WUT); Period of realization 1984-1987; Technical Reports 1985 (35 pages), 1987 (50 pages); Issued by WUT;	introduction of optoelectronic instrumentation systems in robotics; Particularly in the equipment for robot gripper; Grant realized in cooperation with the Institute of Aviation Technology and Applied Mechanics; Faculty of Mechanics, WUT; Investigation of novel solutions of optical fiber and optoelectronic sensors compatible with optical fibers for robotics. The sensors were: touch, movement, direction of movement, force of grip, surface distribution of force of grip, shape of grip impression, slip from grip, change of shape under grip, tactile, color recognition.	community; Laboratory set-up for practical tests and measurements of armoured robot gripper; Optoelectronic tactile sensors, sensors of touch and slip; sensors of x-y localization ; Publications (6); Invited Lecture during Nat. Conference of Robotics in Wrocław Univ. Technology; Robot gripper model equipped with optoelectronic sensors;	devices for a small laboratory robot gripper; Building of a laboratory set-up in the Institute of Aviation Technology and Applied Mechanics of WUT; Two Ph.D. theses were realized under my direct co-operation and supervision; They concerned design, construction and tests of a robot gripper equipped with fiberoptic instrumentation.	(40%)
4	Tailored (specialty) optical fibers; National Research Program on Optoelectronics CPBR 8.12; Period of realization 1985-1991; Annual Technical Reports, Issued by WUT;	Complex research program on tailored, specialty optical fibers (TOF) and their applications; Preferred non-telecommunication applications of TOFP; The inter-institution, inter-disciplinary research team: WUT, Białystok Univ. Technology, ITME CEMAT Institute in Warsaw, Glass Works Białystok; Tailoring of fibre refractive index, and core shape of single mode and multimode optical fibers;	Six annual Technical Reports (100 pages average size of a single report); Publications (20) Technologies introduced to production of specialty optical fibers in full industrial conditions; One Ph.D. thesis realized under my supervision;	Building and coordination of a large national research group of technology of tailored optical fibers; The group consisted of technological centers: Glass Works Białystok, Białystok Univ. of Technology, WUT and ITME-Cemat Institute in Warsaw; Several novel classes of complex optical fibers were invented; The process included fibre design, theoretical research, manufacturing, measurements and offering as a catalogue product by Glass Works in Białystok; The fibers were of very complex refraction and of noncircular cores as well as multicore;	Leader of a research team; Manager of the Fiberoptic Industrial Technological Group; 50%
5	Optical Fiber Submarine Communications; Grant by the Ministry of Communications; Period of realization: 1985-1986; Technical Report X 1986, Issued by Ministry of Communications; (120 pages)	This study was a part of the preparations of this country to build the first fiber optic broadband submarine fiberoptic communications line between Poland shore (Koszalin) and the Danish island of Bornholm at the Baltic sea; The subject of the research was to study the most critical parameters of the fiberoptic submarine line,	Detailed technical report; Invited Lecture during the Research Advisory Board of the Minister of Communications; Publications (5)	Participation in a big investment program lead by the Ministry of National Communications; Fiber Optic International Communications Line between Bornholm and Koszalin;	Leader of the analytic team; 50%

		have on site visits, compare parameters of a few different solutions, analyse development trends in the fiberoptic submarine communications, compare with satellite communication alternative;			
6	Microlenses in optical fiber technology and integrated planar optoelectronics; Central Nat. Res. Progr. On Optoelectronics Technologies and Components; CPBR 8.12; Period of realization 1986-1988; Technical Report III 1988 (90 pages);	Research on methods of discrete, planar and fiber microlens manufacturing and applications for building of optical microsystems; Systems of concern: photonic information processing, functional instrumentation systems, sensory telemetric systems, optical communications systems;	Technical Report for the Institute of Construction of Precise and Optical Apparatus, WUT; Publications (8); Building of laboratory hybrid fiber-planar photonic systems;	A few teams working in the CPBR8.12 Program on Optoelectronics used the results in own laboratories for building of photonic systems; Development of new technologies of optical fiber microlenses and sub-miniature GRIN lenses;	100%
7	Optical fiber local functional networks; Grant realized within the Central National Research Program on Optoelectronics CPBR8.12; Period of realization: 1985-1990, Annual Technical Reports;	Research of topologies and configuration of novel solutions to optical fiber local range networks for applications in industry, medicine and inside autonomous objects;	Technical Reports (5) Publications (5); Tests of network implementations;	Mastering of techniques of building of local area optical fiber Access networks for autonomous objects; Tests places: Electrical Power Station in Opole; Large sailing yacht owned by scouts; Hospital CZD in Warsaw; Two M.Sc. theses realized under my supervision;	Team Leader 50%
8	Optical Fiber Technology for Middle Infrared Spektrum (MIR-OFT); Grant realized within Nat. CPBR.8.12 Program on Optoelectronics; Period of realization: 1985-1989, Annual Technical Reports	Digest of available materials and technologies for MIR-OFT; Analysis of manufacturing possibilities of MIR optical fibers by national manufacturers; Technological tests with ultrapure glasses for MIR optical fibers: heavy oxide glasses, oxyhalide glasses, halide and chalcogenide glasses; Manufacturing of optical fiber samples for transmission in the spectral range of 2-6 μ m;	Technical Reports (4) Publications (5) Technological Tests	Work done in university-industry corporatio: Academy of Mining and Metallurgy (AGH) in Kraków, ITME-CEMAT Institute in Warsaw and Glass Works of Białystok; Glass synthesis at ITME and GWB;	Leader of a research team 70%
9	Optical Fiber Couplers; Sub-grant realized within CPBR8.12 Nat.Progr. on Optoelectronics; Period of realization: 1985-1990; Bi-Annual Technical Reports;	Technology development of optical fiber couplers for tailored optical fibers; Kinds of fibers: of complex internal refraction and of non-circular cores; Development of measurements and characterization techniques for tailored optical fibers and for components made of tailored optical fibers;	Technical Report (2); Publications (4) Numerable series of manufactured and characterized laboratory couplers made of tailored Optical Fibers;	Mastering of technology of manufacturing of couplers from tailored optical fibers; Laboratory production of couplers, Y branches and similar components at ITME Warsaw and Glass Works Białystok;	Leader of a research team 50%
10	Design and realization of optoelectronic measurement system for monitoring of	Opracowane podstaw teoretycznych budowy systemu pomiarowego; Budowa sondy światłowodowej	Raport techniczny dla KBN; Publikacje (5)	Zdobycie doświadczeń w instalacji badawczych systemów światłowodowych w terenie	Leader of the research team; 50%

	hydronium ions level (pH) in natural surface water flows; Grant of Nat.Res.Council (KBN) No 8 T10C 041 09; Period of realization: 1995-1996; Technical Report 1996 (120 pages); Issued by WUT;	Design and realization of fully out of laboratory optoelectronic measurement system; Natural environment tests of optical fiber networked pH meter;	Technical Report for KBN; Invited Lecture for The COE'94 Conference in Zegrze on Optical and Electronic Sensing Technologies;	Optoelectronic System tests on Wistula River in Warsaw; Period of tests III-X 1996; Four M.Sc. El.Eng., theses realized under my supervision	
11	Integrated, optical fiber, multiparameter, sensor of pH, alcali metal ions and temperature; Priority Res. Progr. of the Warsaw Univ. of Technology (WUT) on „Photonics Engineering”, Sub-grant; Period of Realization 1996-1997; Technical Report V 1997 (50 pages);	Continuation and considerable extension of research from the KBN 8T10C04109 Grant on optical fiber pH meter (above); Theoretical approach to design and construction of optical fiber multiparameter probes and photonic measurement systems; Design and realization of integrated fiber-optic microprobe; Environmental tests of the optical fiber probe and photonic measurement system;	Technical Report; Publications (6) Users' model of the fiber optic probe and measuring systems; One Ph.D. thesis done in this subject under my supervision; Real world tests of the system;	Work realized in co-operation with research teams from the Faculty of Chemistry of WUT and Faculty of Environmental Engineering of WUT; Creation of an Inter-Faculty Research Team; Mastering of technologies of building of optical fiber systems for natural environment applications; System tests on Wistula River (Czerniakowska Water Factory) and Utrata River near Zelazowa Wola and Town of Pruszków;	Leader of the research team 50%
12	Optical Fiber Sensory Telemetric Network; Priority Res. Progr. of the Warsaw Univ. of Technology (WUT) on „Photonics Engineering”, Sub-grant; Period of Realization 1996-1997; Technical Report V 1997 (50 pages);	Continuation of the sub-grant on optical fiber multiparameter probe and photonic measurement system; Supplementation of the above Project with optical network Access and data Exchange; Connecting of a few systems via fiber optic transmission bus; Tests of networked photonic system in natural environment conditions;	Technical Report; Publications (10) User's model of the fiber optic telemetric network with photonic multiparameter probes;	Application of the photonic telemetric network to monitor the municipal water and sewage network; Co-operation with Municipal Enterprise of Water and Sewage Management in Warsaw;	Leader of the research team; 50%
13	Tests of programming environments BridgeView, LabView and LabWindows; Grant by National Instruments, Poland, Period of Realization: 1996-1999; Technical Report 1998 (20 pages);	Tests of programming environments BridgeView, LabView, LabWindows granted by the manufacturer National Instruments; Tests were performed by a few M.Sc. students, under my supervision, during two years; Beta version of new software design was tested; Complex projects were built and managed via the tested software;	Technical Report; One B.Sc., El. Eng. Thesis, One M.Sc. thesis; Publication (2); Realization of a few new object libraries for optoelectronic telemetric networks;	Mastering of big programming environments for measurement and instrumentation purposes; Application of the environments to build programming layer of optoelectronic telemetric network; Building object libraries for optoelectronic telemetric network;	Leader of research team 50%
14	Research on efficiency of	Complex series of systematic environmental	Technical Report;	Organization of a team of experimenters	Leader of a

	optoelectronic multiparameter probe in locations of enhanced risk of environmental balance violation; Priority Res. Progr. of the Warsaw Univ. of Technology (WUT) on „Photonics Engineering”, Sub-grant; Period of Realization 1997-1998; Technical Report V 1998 (60 pages);	investigations, medium and long term with optoelectronic telemetric system with optical fiber transmission and photonic sensors; Tests carried out with cooperation of Warsaw Water and Sewage Management Enterprise;	Publications (2) User’s model of the photonic probes designed to work in harsh environment and telemetric network;	consisting of 15 persons from co-operating institutions; Locations of system tests: Sewage clearing factory in Pruszków, Sewage Cleaning Factory Czajka in Warsaw, Central Water Intake Factory Czerniakowska;	team; 50%
15	Working model of optical fiber, multinode telemetric network cooperating with multiple photonic sensors and compatible with most of the measurement signal standards: IEEE, RS, GPIB, CAN, VME, Priority Res. Progr. of the Warsaw Univ. of Technology (WUT) on „Photonics Engineering”, Sub-grant; Period of Realization 1997-1998; Technical Report V 1998 (40 pages);	Construction of user’s grade local optoelectronic network of LAN type with additional protocols native to metrological standards; Demonstration of the integrated network with photonic sensors;	Technical Report; Publications (2); User’s grade model of the network; Model implementation at user’s promontories; Two realized B.Sc. El.Eng., theses;	Mastering of integration technology between optical network and various kinds of sensors: photonic, optoelectronic and other like chemical, mechanical, electrical and electronic with standardized I/O interfaces like RS, USB, IP and the like; The network is an immediate vicinity of a massive metrological and database server working in IP environment;	Leader of research team 50%
16	Multiparameter optical fiber probe for water measurements: technology, construction, characteristics and tests in natural environment; Priority Res. Progr. of the Warsaw Univ. of Technology (WUT) on „Photonics Engineering”, Sub-grant; Period of Realization 1997-1999; Technical Report V 1999 (50 pages);	Design and construction of an optical fiber probe measuring at least 3-5 parameters of surface water flows simultaneously; Construction of a set-up consisting of several photonic probes; Tests of the set up in natural environment conditions;	Technical report; Publications (3) User’s model of the multiprobe set-up; Tests of the set-up with the Municipal Water and Sewage Enterprise in Warsaw; Consultation of Ph.D.thesis with Faculty of Environmental Engineering;	Continuation of the work on optical fiber water and sewage monitoring system; Test applications for Municipal Water and Sewage Enterprise;	Leader of a research team; 50%
17	Modification of multicrucible technology of soft glass optical	Modification of proprietary method of tailored optical fiber manufacturing; Multicrucible-Zone Diaphragm	Technical report; Publications (5)	Development and modification of proprietary MMC technology of tailored	Leader of a research team;

	fibers with two adjacent cores; manufacturing of double-core fiber samples; Characterization of double and twin-core optical fibers for photonic sensors; Priority Res. Progr. of the Warsaw Univ. of Technology (WUT) on „Photonics Engineering”, Sub-grant; Period of Realization 1998-1999; Technical Report V 1999 (40 pages);	(MZD) technology; Design of hybrid Modified Multicrucible Method (MMC); Manufacturing of double core fiber samples for laboratory tests; Mastering of measurement and characterization techniques of double core singlemode optical fibers; Preparing of a catalog and application notes for double core optical fibers; Making the fiber samples available for other laboratories for research;	Double-core and twin core optical fiber samples in single mode and multimode choices; Catalogue and application notes of double core optical fibers;	optical fibers; Providing of fiber samples to a number of domestic and international laboratories throughout the world;	50%
18	Interactive optoelectronic telemetric network for the Faculty of Electronics and Information Technologies, WUT; Priority Res. Progr. of the Warsaw Univ. of Technology (WUT) on „Photonics Engineering”, Sub-grant; Period of Realization 1998-1999; Technical Report V 1999 (30 pages);	Construction of a dedicated telemetric network for the Faculty; Practical demonstration of the network;	Technical Report; Publications (3) User’s model of the optoelectronic network;	Mastering of the construction techniques of advanced optical fiber networks of multiple integrated functions; Application of the network within the Faculty of Electronics of WUT; Demonstration of meteorological server measuring around twenty meteorological parameters and building measurement database;	Leader of a team 50%
19	Fast optoelectronic pipeline bus using optical fiber links for applications in telemetric systems equipped with photonic sensors; Priority Res. Progr. of the Warsaw Univ. of Technology (WUT) on „Photonics Engineering”, Sub-grant; Period of Realization 1999-2000; Technical Report V 2000 (40 pages);	Design and construction of components and devices for optical pipeline (synchronous) multiaccess bus; With inputs and outputs distributed along the optical bus; Construction of laboratory set-up of the bus; Electronics using programmable chips – Altera and Xilinx;	Technical report ; Publications (2); M.Sc. thesis (2); User’s model of the optical pipeline bus;	Mastering of manufacturing technologies of optical pipeline buses; Next stage of development of complex photonic network system for applications at CERN, with the CMS/LHC project;	Leader of a research team; 50%
20	Development of technology of soft-glass optical fibers with elliptical cores;	Mastering of repeatable technology of manufacturing of singlemode elliptical core optical fibers with strictly designed degree of ellipticity; Manufacturing	Technical report; Publications (2); Samples of elliptical core	Next stage of development of the proprietary MMC technology of tailored optical fibers;	Leader of a research team; 50%

	Priority Res. Progr. of the Warsaw Univ. of Technology (WUT) on „Photonics Engineering”, Sub-grant; Period of Realization 1999-2000; Technical Report V 2000 (40 pages);	of optical fiber samples – singlemode and multimode of cores with range of ellipticities; Preparing a catalog and application notes for elliptical soft-glass optical fibers; Mastering of characterisation and measuring techniques of elliptical core optical fibers;	singlemode optical fibers with various ellipticities; Catalogue of elliptical core optical fibers; A book of application notes for elliptical core optical fibers;		
21	University, Internet, Metrological Server; Rector’s Grant 1999-2000 Period of realization; Technical Report V 2000 (60 pages)	Development of an advanced meteorological server measuring over 20 meteo parameters like: ceilometry-height of clouds base, air visibility distance, CO ₂ and NO _x contents, etc; Server was located at the roof of the Faculty (Electronics and Information Technologies, WUT) building;	Technical report; Publications (2) B.Sc. thesis (2); M.Sc. thesis (1); Working model of the meteorological server;	Continuation of previous work on telemetric optoelectronic networks; The server was connected to Internet and local telemetric network; Server was active during the period 1997-2002; Due to measurements of unique values got quite famous in Warsaw region;	Leader of the research team; 50%
22	Development of technology of optical fibers with matrix cores; Priority Res. Progr. of the Warsaw Univ. of Technology (WUT) on „Photonics Engineering”, Sub-grant; Period of Realization 2000-2001; Technical Report V 2001 (40 pages);	Modification of the proprietary Modified Multi-Crucible (MMC) technology of soft-glass optical fibers to manufacture single-mode and multi-mode optical fibers with matrix like distribution of cores in a common cladding; Core spacings comparable to core dimensions; Mastering of characterization and measurements of optical fibers with matrix cores; Development of coupling techniques for matrix core optical fibers; Manufacturing of matrix core fiber samples; Making the samples available to outside laboratories; Writing a catalog and a book of application notes for matrix core optical fibers;	Technical report; Publications (3) Samples of unique kind of optical fibers with matrix, closely spaced, optically coupled cores; Catalogue of matrix core fibers and book of application notes;	Next stage of development of proprietary MMC technology of tailored optical fibers;	Leader of a research team; 50%
23	Fitting the photonic telemetric network with optical fiber sensors to the needs of network contractors: 1) CERN in Geneva, 2) Institute of Meteorology and Water Management, 3) Municipal Enterprise of Water and Sewage Management in Warsaw, 4) Town of Zielonka near Warsaw; Priority Res. Progr. of the Warsaw Univ. of Technology	Summary of 7 years work on optical and hybrid telemetric networks leading to full scale practical applications in real life industrial and environmental conditions at contractors’ sites’ Development of a variety of application models suited for particular work conditions;	Technical report, Publications (2) Practical application models of photonic telemetric networks for contractors;	The result after 7 years of research work (1995-2001) was implementation of the photonic and hybrid networks at contractors’ sites;	Leader of a research team 50%

	(WUT) on „Photonics Engineering”, Sub-grant; Period of Realization 2000-2001; Technical Report V 2001 (80 pages);				
24	Development of a very large object database for measurement and diagnostic system for the ZEUS detector at DESY in Hamburg; A grant by DESY and Faculty of Physics, Warsaw University; Period of realization 1997-2003; Annual Technical Reports in form of Zeus/Desy Technical Notes; Last Rep. Dec. 2003 (15 pages);	Development of diagnostic system for ZEUS detector at HERA accelerator; Development of functional imaging methods of ZEUS detector components in the database; Choice of tools and programming environments; Choice of measurement methods; Adaptation of existing telemetric network; Application of photonic technologies; Development of modern and versatile graphical users; interface (GUI); Development of dynamic methods of measurements results inbuilding in the database;	ZEUS/DESY Technical Notes; Publications (6); M.Sc. theses (3); Development of a completely novel object dynamic database describing large engineering object; Combining hardware, measurement, instrumentation and software layers;	We made operele one of the biggest programming projects concerning ZEUS detector in DESY; Since several years the team consisted of ore than 10 people; First tests of the whole diagnostic system were done on the working ZEUS detector in 2002; Project done in cooperation with Institute of Experimental Physics, Warsaw University;	Leader of a research team (15 persons) 20%
25	Design, manufacturing and tests of experimental controller for Muon Trigger Module for RPC detector of CMS/LHC experiment in CERN, Geneva; Grant by CERN and Faculty of Physics, Warsaw University; Period of realization 2001-2002; Annual Technical Reports and CMS Technical Notes on CMS/CERN web;	Design of a controller consisting of hardware solution and software management system; Choice of hardware and software solutions; Practical realization of controller for muon trigger module; Multiplication of the controller; Tests of the controller within the full data readout system in CERN CMS testbed;	Two technical reports; Publications (2); M.Sc. theses (2); Users’ model of the Muon trigger module controller;	Cooperation with the Institute of Experimental Physics, Warsaw University at the realization of (electronic and photonic) instrumentation system of data readout and diagnostics of CMS detector of LHC accelerator in CERN; Application of the controller on the system VME PCBs of the Muon Trigger;	Leader of a team from the WUT side; 30%
26	Design and performance of diagnostic system for large electronic and photonic systems of high energy physics experiments – LHC in CERN; Period of realization: 2000-2006: Grant by CERN and Nat.Sci. Comm and Fac.Physics, Warsaw University; Annual Technial	Design and making a working practical model of diagnostic system for RPC muon trigger of CMS/LHC detector in CERN Genewa; Work realized in the period of 2000-2006 in cooperation of Institute of Experimental Physics, Warsaw University; (Particular annula tasks change accordint to the schedule) Task for 2001-2002: Design and development of diagnostics models of triggering processes;	Annual Technical Reports; Publications (5) M.Sc., and Ph.D., theses; Users’ models	Cooperation with Institute of Experimental Physics, Warsaw University; Cooperation with Institute of Physics, Helsinki University of technology and Helsinki University, Finland, Cooperstion with University of Bari, Italy; Practical application in CERN Geneva;	Member of a Poland CMS team; Leader of a research sub-team; 20%

	Reports in form of the CMS Technical Notes;				
27	Design and development of first level trigger for BAC detector of ZEUS/HERA in DESY, Hamburg; Period of realization: 2000-2004; Grant by DESY; DESY ZEUS Technical Notes;	Design, development and upgrading of first stage trigger (FLT) for the Backing Calorimeter BAC; Particular task for 2001-2002: Implementation of triggering processes in the programmable circuits FPGA - Altera;	Technical Report; Publications (3); M.Sc., and Ph.D., theses; Users' model of the system tested in real life application, exploitation conditions at the detector;	Cooperation with the Institute of Experimental Physics, Warsaw University; Participation of PERG students in the realization of the project; Practical application in DESY, Hamburg;	Member of a team; Leader of a sub-team; 20%
28	TESLA International Program to build superconducting linac and roentgen free electron laser in DESY, Hamburg; Building measurement, instrumentation, control and diagnostic systems; Grant by DESY; Period of realization: 2002-2008;	Design, development, construction, manufacturing, tests of a control, simulation and diagnostic system for resonant accelerator superconducting, microwave cavity; Realization of the model in FPGA/VHDL and photonic technologies; Development of the model for the electron RF Gun; Investigations of radiation resistance of the designed electronic and photonic instrumentation and measurement systems in the environment of e ⁺ e ⁻ linac;	Quarterly Technical Reports; TESLA Technical Reports at TESLA web; Tesla.desy.de; Publications (12); M.Sc., and Ph.D., theses; Practical introduction of measurement system;	Fundamental sub-system for a large international project in DESY, Hamburg, Laser and accelerator TESLA;	Leader of a Poland Tesla ELHEP Team;
29	European Steering Committee on Accelerator Research & Development (ESGARD) and CARE Program (Coordinated Accelerator Research in Europe) to be financed within European Union 6th Framework Program (FP6) ESGARD/CARE/FP6; Period of realization :2003-2006; Grant on Low Level Radio Frequency Control System for TESLA (LLRF)	Research, Design, manufacturing and tests of the photonic and electronic instrumentation LLRF control, diagnostic and simulation system for superconducting linear accelerator and X-Ray and gamma ray free electron laser;	Periodical Technical Reports; TESLA DESY Technical Notes (7); Publications (5); M.Sc., and Ph.D., theses; Practical applications at users level; Tests in industrial conditions;	Practical application in international accelerator research center DESY, Hamburg	Leader of ELHEP Research Group (35 persons)
30	National Govt. Program of Optoelectronics Research, Instrumentation Development and Applications, Invited Grant by the Nat. Committee of Research; Period of	Research, design, construction and manufacturing of certain kinds of photonic optical fibers from soft-glasses; Investigation on adaptation of the Modified Multicrucible Technology to manufacture photonic optical fibers for instrumentation applications; Preparation of samples of optical fibers with microholes from ultrahigh-purity multicomponent	Annual Technical Reports; Publications; M.S and Ph.D. theses; Samples of novel solutions of photonic fibers from new materials; New fiber impregnation	Photonic optical fibers are hot practical research area; MMC technology and proprietary mosaic assembling technology (MAT), published by authors in mid 1980ties are very promising to obtain novel kinds of photonic optical fibers of different	Leader of technological research team; 30%

	Realization: 2004-2006; Annual Technical Reports; Sub-grant on Tailored Optical Fibers of Photonic Structure with microholes;	glasses; Doping and impregnation of microhole optical fibers; Making the sampoles available to external laboratories; Mastering techniques of characterization and measurements of certain kinds of photonic optical fibers; Trials on applications of manufactured optical fibers; Preparation of catalogue of manufactured photonic optical fibers; Preparation of book of application notes for manufactured optical fibers;	technologies; Samples available to interested photonic research laboratories; Catalogue and application notes of novel kind of photonic optical fibers;	properties; Application in photonic instrumentation systems; Cooperation with tailored optical fiber technological center of Bialystok University of Technology;	
31	National Govt. Program of Optoelectronics Research, Instrumentation Development and Applications, Invited Grant by the Nat. Committee of Research; Period of Realization: 2004-2006; Annual Technical Reports; Sub-grant on HOST – Hybrid Optoelectronic Instrumentation and Telemetric Networks;	Research, design and performance of module HOST componants using VHDL, FPGA, photonic switching and multi-gigabit photonic technologies; Building of miniature, integrated photonic network modules for practical applications in optoelectronic telemetry;	Auunual technical reports; Publications; M.Sc. And Ph.D. theses; Practical implemantation for natural environment monitoring. Practical applications in military conditions;	Cooperation with Institute of: Telecommunication, WUT; Faculty of Chemistry, WUT, Faculty of Environmental Engineering, WUT; Military Academy of Technology, Warsaw; Building of several network solutions for varied applications;	Leader of a team; Member of the Program;

Selfportrait

I was studying at the Warsaw University of Technology since 1971 as a M.Sc. student, since 1976 as a Ph.D., student and then working as an assistant and adjunct professor since 1980. During the period of essential political transformation in this country (period 1989-90) I was asked by the new government of Poland to serve as a director of department in the Ministry of National Education and the Office of the Prime Minister. The year of 1991 I spent in the USA as the President D.D.Eisenhower Fellow [www.eef.org]. I have also had a few longer research fellowships to the UK, Germany and USA. Now I am a manager and principal researcher of two Research Laboratories at my University, Faculty of Electronics and Information Technologies. These are PERG – Photonics and Web Engineering Research Group and ELHEP – Electronics for High Energy Physics Experiments. These laboratories gather now more than 30 people. The ELHEP Laboratory has its branch in DESY –Deutsches Elektronen Synchrotron Institute in Hamburg, Germany. A few of PERG and ELHEP people are working there permanently. This group consists mainly of M.Sc. and Ph.D. students and works on behalf of TESLA project (superconducting linac and X-Ray free electron Laser) and ZEUS/HERA detector.

Since 1980 I am active in the Association of Polish Electrical Engineers (SEP). SEP has formal international Memorandum of Understanding (MoU) with the IEEE and is a sister society to the IEEE. I obtained the valuable professional title of Registered SEP Expert in Optoelectronics and Communications in 1986. Just after that I applied for IEEE Membership and obtained Senior Member from the beginning of my IEEE involvement. Since that I am active in Poland Section of IEEE. I presented several invited lectures to the engineering community of IEEE in Poland. I gave the first invited lecture to the Poland Section of IEEE in February 1982, more than 20 years ago. I obtained the titles of professional engineer (chartered engineer) of the I^o in 1987 and II^o in 1989 and diplomas by the Ministry of National Education (MEN) and the National Federation of Engineering Organizations (NOT). I was honored with the prestigious title of SPIE Fellow for the development of novel technologies of optical fibres and fiber instrumentation systems, in 1993. I obtained the European engineering title of European Engineer (Eur.Ing.) by FEANI – Federation of European Engineering Associations in 1995 [www.feani.org].

Teaching

Since 1975 I teach at the Faculty of Electronics (now Faculty of Electronics and Information Technologies) of WUT: circuit theory laboratory, electronic circuits laboratory, microwaves laboratory, optoelectronic laboratory, measurement fundamentals laboratory, electronic measurements laboratory. I was lecturing for several years optical fiber technology and optical fiber communications as well as optical fiber sensors and instrumentation systems and optical fiber metrology. I organized student industrial practices in leading national optoelectronics and fiber optics technological laboratories and optical communications laboratories. Some of these laboratories were: Fiber Optics Laboratory at University of Maria Curie Skłodowska (UMCS) in Lublin (manufacturer of communications optical fibers), District Laboratories of Posts and Communications in Lublin and Warsaw (operators of optical fiber communications systems), Glass Works in Białystok (manufacturer of tailored optical fibers and fiberopti instrumentation), Lublin Factory of Optical Cables for Communications, Institute of Electron Technology of CEMI Corporation in Warsaw (manufacturer of semiconductor lasers, LEDs and Ge, Si, GaAs photodides), during the period of 1976-1985. I was a consultant of M.Sc. and Ph.D. theses in optical fiber technology at the Białystok University of Technology, Polytechnics of Radom, Polytechnics in Opole, Lodz Technical University, during the period of 1980-1988. It was caused by the lack of local experts in optical fiber technology in these universities and research centers. I was principal consultant of two Ph.D. theses in applications of optical fiber instrumentation systems in robotics during the period of 1982-86. This work was successfully finished with experimental applications in industrial conditions in 1986.

I was a principal consultant of a Ph.D. thesis of my close coworker (J.Doros) at Białystok University of Technology on novel technologies of tailored optical fibers at the Białystok University of Technology and Glass Works of Białystok. The work entitled “Modified crucible technology of optical fibers” was finished successfully in 1984 at UMCS. Several proprietary technologies of optical fibers were developed in the framework of this cooperation. A number of these technologies was introduced to industrial conditions. During the period of 1984-1989 we were the most frequently cited pair of authors in the world on optical fiber technology from this geographical region. Samples of our novel fiber constructions were requested by nearly all leading world laboratories active in optical fiber technology and optoelectronic instrumentation systems. Some of these laboratories were: Univ. of Southampton, At&T Bell Laboratories, Corning Glass Works, numerable University labs in the USA.

Since 1995 I am organizing, two times a year, initially university based, and then National and International M.Sc and Ph.D. student and young researcher Symposia under the umbrella of the IEEE, SPIE and SEP organizations. The place is WILGA Village near Warsaw, a resort center owned by Warsaw University of Technology. The leading topic of the joint IEEE-SPIE Symposium is Photonics and Web Engineering. Other topics are: large and complex measurement and instrumentation systems and the Internet, mechatronics and nanotechnologies. The proceedings are issued on CD-ROM and since 1992 in the international series Proceedings of SPIE and Journal of Electronics by SEP. The official language of the Symposium is English. The laboratory which I lead is known on the Internet under the name of PERG – Photonics and Web Engineering Research Group <http://nms.ise.pw.edu.pl>; <http://pergx.ise.pw.edu.pl>; x=1,2,3..). The PERG Group consists of more than 30 B.Sc., M.Sc. and Ph.D. students. The Symposium was recognized as an official event of the IEEE Poland Section and IEEE Student Branch of Warsaw University of Technology. The Symposium is advertised in the R8 of IEEE in the R8 IEEE Newsletter and in SPIE press and web. The Symposium is trying to gain recognition as the IEEE GOLD meeting in this geographical region and the R8. Now more than 200 persons participate from this country and IEEE R8.

The PERG and ELHEP Groups students work (under my and my co-workers supervision) in several sub-groups like: ESO-ASTRO, DESY, CERN, MEASURE, OPTO, GRID and WEB. The names of sub-groups are from large international or domestic research programs in which particular group participates. ASTRO Group works on Pi-of-the-sky program in cooperation with the European Southern Laboratory in Las Campanas in Chile. The program is to observe and register the optical flashes accompanying Gamma Ray Bursts of the whole sky and trigger proper satellite for recording of the event. DESY Group works on the development of

Low Level RF control, simulation and diagnostic system for the superconducting linac and X-Ray FEL. CERN Group works on the development of the RPC Muon Trigger for the CMS detector of LHC accelerator. MEASURE Group works on the development of optical fiber or hybrid photonic telemetric network with optoelectronic sensors for industrial applications like in Municipal Water and Sewage Management System. GRID Group works on the development of global calculations substation at our University. WEB Group works on several Internet based projects like building DOOCS systems (Distributed Object Oriented Control System).

I was an initiator of signing an agreement of my university with the institutes of DESY and CERN. The agreement opens up a possibility to send students to these international research centers. Several PERG and ELHEP Groups students finished their B.Sc and M.Sc. theses in these institutes under my supervision. Several Ph.D. students are now working at DESY and CERN and approaching the final status. Nearly 40 students obtained their B.Sc. and M.Sc. titles in the PERG and ELHEP Laboratories under my supervision. A lot of theses are written in English. PERG and ELHEP students publish regularly their work in domestic and international professional press, including refereed journals. The Groups have a number of their own web information servers like <http://nms.ise.pw.edu.pl>; <http://hegemon.ise.pw.edu.pl>. The Groups manage also the central information server of the Institute <http://www.ise.pw.edu.pl>.

Research on tailored optical fibers

My nearly all research activity (early years) is connected with a narrow topic of technology and instrumentation applications of optical fibers. I started the involvement in this subject in 1974 as a student under the supervision of my M.Sc. and Ph.D. tutor, professor A.Smolinski, member of PAS. In February 1976 I participated (as a member of the organizing committee) in the First National Symposium of Polish Academy of Sciences (PAS) on "Optical Fibers and Their Applications". I actively participated in the Second Symposium of this series organized in Jablonna near Warsaw in 1976 as an author and co-editor of Symposium proceedings. Since that date I participated in all Symposia of this series organized to date. Starting from 82, I participated as a member of the Symposium Program Committee and Proceedings editor. Till now I edited over 20 volumes of these Symposia. Some of these volumes were in English for the international market. The Symposia were organized also under the auspices of IEEE Poland Section.

I participated in preparation work on several big national research programs on optoelectronics such as: PR3, PR3S, Electronization of National Economy, CPBR8.12. Optoelectronic Technologies and Components, CPBR.8.05 – Optical Communications, during the decade of eighties. During the decade of nineties I participated actively in the WUT Priority Research Program "Photonics Engineering". Also I realized a few grants of National Research Committee on optical fiber technology, sensors and optoelectronic instrumentation systems. Some of the recent grants financed by the Nat.Res.Comm. (KBN) were: KBN (8T10C04109a – Photonic Measurement System for Hydronium Ions monitoring in surface water flows; 4T08D-22 – Optical fiber ring-index fibers. PI-of-the-sky – Observation of Optical Flashes accompanying GRB of the whole sky. I am a member of a team preparing big national grant on optoelectronics development for national economy. Part of this grant is starting from 2004.

During the first period of my research career I was interested in biomedical applications of optical fiber technology. The fibers were then, in the seventies and early eighties, nonspecialized. I was building sensors and functional components of these fibers. During this work the analysis went on the differentiation between optical fibers needed for various purposes. Then the effort was undertaken to fabricate such differentiated fibers.

I cooperate with all leading technological centers of optical fibers active in this country, since 1978, including: Białystok University of Technology, Glass Works of Białystok (now Biaglass), Institute of Electronic Materials Technology (ITME) in Warsaw, University of Maria Curie Skłodowska in Lublin (UMCS) and Academy of Mining and Metallurgy (AGH) in Kraków. As the results of this cooperation, there were developed numerous solutions concerning tailored optical fibers for instrumentation and fibers for communications. I published the work in this subject in numerous conference and journal papers. I prepared a few invited issues of domestic and international journals [Int.J.of Optoelectronics, Opto-Electronics Review, Electronics] and invited issues of conference proceedings volumes [www.spie.pl]. On the international field, with IEEE, SPIE, OSA and EOS organizations, I was one of the initiators to separate the term of tailored (specialty) optical fibers within the technology of optical fibers. Main directions of my work were biomedical applications of optical fibers, industrial and environmental applications, optical fiber sensors from tailored optical fibers and recently optical fiber telemetric systems and networks with photonic sensors.

According to my subjective judgement, the following work concerning tailored optical fibers I may consider as my original contribution:

- 1) Broad investigation of the quality of tailored optical fibers from soft-glasses (determined by thermal, mechanical and radiation hardness);
- 2) Mosaic Assembling Technology (MAT) of tailored optical fibers with complex noncircular refractive profiles and with microholes and methods of characterization and measurements of such fibers;
- 3) Manufacturing and characterisation of Multicore optical fibers, mainly quadruple-core and matrix core optical fibers;
- 4) Development of a propagation model and calculation of eigenvalues of propagation constants in quadruple-core and some other kinds of multicore optical fibers; Calculation of complex coupled modes in quadruple-core optical fibers;
- 5) Theory and experiment for dynamic freezing of noncircular cores in tailored optical fibers manufactured by Modified Multicrucible Technology (MMC);
- 6) Mastering of a hybrid technology of manufacturing of optical fibers of very complex internal structure: refractive, geometrical, mechanical and thermal; Development of characterisation and measurement methods for such fibers;
- 7) Mastering of stable and repeatable methods of manufacturing of certain classes of tailored optical fibers from multicomponent glasses as a cheap alternative to high-silica glass optical fibers; Some of these kinds included: HB multicomponent glass optical fibers with normalized birefringence of the order of 10^{-3} , low loss singlemode optical fibers with nonstandard values of the cut-off frequency; low loss single mode elliptical core optical fibers with requested degree of ellipticity; singlemode twin-core optical fibers with narrow and changeable separation of the cores;
- 8) Manufacturing of singlemode optical fibers with strip and strip-like cores;

9) Mastering of efficient methods to change the sensitivity characteristics of tailored optical fibers to external physical reactions, mechanical, thermal, chemical. Development of sensitizing and desensitizing methods for tailored optical fibers. Covering of tailored optical fibers with sensitizing and desensitizing materials. Development of glass-ceramics class of tailored optical fibers.

The following work I consider too as my original contribution to development of the tailored optical fiber technology:

- 1) Full analysis of the dynamics of molten glass stream building a very complex optical filament structure in the Modified Multicrucible technology and Multicrucible Zone Diaphragm (MZD) technology; Analysis for very small Reynolds numbers and creeping flows;
- 2) Building and continuous modernization of basic and auxiliary technological equipment for pulling of tailored optical fibers; Development of the proprietary Modified Multicrucible technology;
- 3) Preparation of the technological basis to manufacture optical fibers of tailored cores, and in particular singlemode, multicore, and of tailored degree of core ellipticity;
- 4) Mastering of repeatable and stable technique of fiber pulling of given complexity of the core; Mastering of characterisation and measurement techniques of these complex-core optical fibers; Measured and characterised parameters include: geometry, mechanic and thermal, physico-chemical, optical, transmission;
- 5) Development of Mosaic Assembling Technology of tailored optical fibers in cooperation with ITME; Usage of this method in combination with rod-in-tube (with soluble glasses layers) for manufacturing very complex (refraction and construction) optical fibre structures; These fibers included: singlemode optical fibers with holes, flexible imageguides of very good contrast and resolution;
- 6) Making a number of families of tailored optical fibers accessible to domestic and international laboratories for research; These fibers included in particular: multicore singlemode, singlemode elliptical core, strip-core;
- 7) Writing a catalogue and a book of application notes for a number of novel families of tailored optical fibers;

Applications and cooperation with industry

I am a co-founder (together with J.Dorosz) of the Research-Production Department of Optical Fibers in the Glass Works of Białystok (next Biaglass). The technological center was active during the period of 1978-2000 and manufactured optical fibers and devices. Now the center was moved to the Białystok University of Technology. The Department of Optical Fibers was manufacturing unique fiberoptic devices and equipment, including: experimental fiberoptic equipment, biomedical probes, optical fiber sensors, ophthalmical laser probes, fire alarm fiber optic system, measurement network for electrical power plants, sea vessels, hospitals, municipal monitoring systems, etc. Details of these systems were presented in publications. Long term cooperation between industry and university resulted in creation of local, specialized, well equipped optical fiber and photonic devices measurement, characterisation and standardization laboratory. The laboratory had for example unique characterisation system for optical fiber imageguides and certain kinds of optical fiber sensors. The laboratory specialized nationwide in measurements of tailored optical fibers and offered opened measurement services.

My work in the domain of applications of tailored optical fibers had the character of checking the fiber properties in different conditions and building pilot applications to be multiplied in case of marketing success. Some of the investigated pilot applications included: optical fiber ionising radiation dosimeter using sensitized and desensitized filaments; optical fiber pulse sequencer with classical and multicore fibers, checking of Core Division Multiplexing (CDM) technology in multicore tailored optical fibers, family of glass-ceramic optical fiber sensors, laboratory set ups of optical fiber sensors of temperature, pH, alkali ions, calcium ions, heavy metal ions, mechanical values, acoustics and vibrations, optical fiber couplers made of tailored optical fibers, optoelectronic instrumentation for electrical power plant, firing of optical thyristors, optoelectronic equipment for industrial robot gripping mechanism, broadband optical fiber bus with classical and multicore fibers, ophthalmological fiber optic surgical microprobe, optical fiber novel solutions for imageguides, mosaic fiber matrixes, fibre GRIN lenses. Some of these solutions were implemented to serial production and working in industrial conditions like: optical fiber fire alarm system for furniture industry, optical fiber telemetric system for natural environment monitoring and supervision of municipal engineering systems, communications and telemetric system for a sea vessel, optoelectronic telemetric Internet metrological workstation, server and network with photonic sensors.

Activities in professional societies

Since 1976 I was a Scientific Secretary of the Section of Optoelectronics in the Committee of Electronics and Communications of Polish Academy of Sciences. In 1985 I was asked by the Section to be a permanent member of the cyclic National Schools of Optoelectronics of Polish Academy of Sciences. The main aim of these schools is to provide continuous education capability at the highest level for top country engineers. The first School was organized in 1987. The XVIth School of this series was organized in 2001. In 1985 I was a founding member of the Polish Optoelectronics Committee of SEP (P.K.Opto). Since the beginning of this Committee I was a member of the Board. Since 1992 I am a vice-president of this Committee. I am an initiator of establishment of the Committee Journal "Opto-Electronics Review". This journal is now on the Philadelphia list of international impacted journals. Now I am a member of the international advisory board in this journal. I was an invited editor of one of special issues of this journal devoted to the optical waveguide technology.

I was an initiator of creation of new engineering specialization in optoelectronics via the P.K.Opto and NOT Engineering Federation. This specialization was approved for SEP certified expert engineers. The specialization for SEP experts in optoelectronics was opened in 1985. The specialization of NOT was opened in 1987. I was the first person in this country to obtain these specialization and expert engineer degrees in optoelectronics from SEP and NOT.

I participated in all of the most important initiatives of the P.K.Opto Committee, and Section of Optoelectronics of PAS on all levels: research, didactic, and economic/managerial. A few of these initiatives were: establishment of the International Foundation of Optoelectronics (I was there a vice-president a few terms), establishment of Polish Optoelectronics Consortium with initial members of WUT, ITME, Institute of Applied Optics, Military Academy of Technology and private photonic firms.

I was a major initiator of signing an international agreement between SEP and SPIE and establishment of the SPIE Poland Chapter on the similar legal basis as the earlier established IEEE Poland Section. I participated in several international congresses of IEEE and SPIE in Europe and the USA. I prepared and taught a few whole day engineering tutorials in applications of optical fibers in adverse environments during SPIE congresses on optoelectronics in San Diego and Boston. I was an organizer of the first Polish optoelectronics equipment exhibit during several industrial exhibitions accompanying photonics conferences organized by SPIE and OSA and IEEE/LEOS. I organized a panel discussion on optical fiber sensors during the 30th Anniversary meeting of SPIE. During this meeting was awarded the SPIE 30th anniversary plaque. I am a member of the Board of the SPIE Poland Chapter. I am a member of the ExCom of the IEEE Poland Section.

In 1991, during the OSA and IEEE/LEOS Congress in Baltimore I was asked to be a member of the International Advisory Committee of the Photonics Spectra Magazine and Laurin Publishing Co. a leading marketing journal in photonics and a leading publisher of the world photonics directory. I am also a member on the program and reviewing panel of the International Photonics Industry Award "Photonics Circle of Excellence Award". During the period of 1986-1994 I was a member of the Program Committee of International Journal of Optical Sensors and International Journal of Optoelectronics (Taylor&Francis, Londyn). I was an invited editor of a special issue devoted to optoelectronics in Poland in Int.Journ. of Optoelectronics. During the period of 87-91, I was a member of international advisory board in a photonics newsletter FOC² published by the Photonics Information Gatekeepers in Boston.

I am a member of the professional societies – international OSA, SM-IEEE, LEOS, LIA, EOS, Fellow-SPIE, and domestic PTETiS, PTF (SO) and EPS. I am an elected member of a few influential domestic and international, business, professional and honorary organizations, among others: Senior Member of the IEEE (NY), Active Member of the New York Academy of Sciences (NY), Fellow of SPIE (WA,USA), Eisenhower Fellow (Philadelphia, USA), Internat.Biographical Society (Cambridge, UK), and I am a subject of biographical record in the Marquis Who's Who in America – Who's Who in the World (93/94 Edition), Who's Who in Engineering and Technology (94/95 Edition).

Pronouncement

During my professional career I tried to be a cautious politician, skilful businessman, gaining experience manager – diligently learning the emerging domestic and international side of the business, and the country's top engineer in a single person. Perhaps it was too much, wasn't it. Also, for the last decade or so I was one of the leaders of the national business in communications. I possess proved, in domestic and international business and research fields, managerial skills and was/am a successful head of several organizations and institutions among others selling on the domestic market and internationally Hi-Tech. originating services and products. I know fluently a lot of computer, photonics and communications technologies in hardware, software and management aspects. Besides English I know German and Russian. I am 51 and still very active in sports.

I know very well some sectors of the national, European and American business, industry and markets including high technology, services, consulting, training people resources management, entrepreneurship, administration and management systems and represent a unique combination of academia and research, industrial and business, as well as sales and marketing, management and administration and legal experience.

I deeply believe in the key survival role of universal civilisation development, international economic integration on a global scale and transnational accumulation of intellect. Two factors are supporting vividly my belief these days. One is that transnational corporations and organizations (like the IEEE, SPIE, EOS) are increasingly viewing regions, rather than individual countries, as the relevant production, markets and science based societies space. The second is that the coming decade promises to be a start to a period in which foreign transnational direct investments and research distribution over the global network will play a major role in shaping world and regional development and the structure of the international economy. I feel the influence of these both processes personally and I think that they affect these days top people of this country and this country's economy.

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