

## **5. Information on Prof. Leszek A. Dobrzański's professional career**

### **5.1. General information**

Prof. Leszek Adam Dobrzański, DSc, PhD, MSc, Eng, MDr HC, was born on 4<sup>th</sup> September 1947 in Gliwice, Poland, where he resides permanently. He graduated from 5<sup>th</sup> Secondary School in Gliwice in 1965. He graduated from the Faculty of Mechanical Engineering of the Silesian University of Technology in Gliwice on 15<sup>th</sup> March 1971, being awarded with the diploma with a distinction. He completed his PhD thesis under the supervision of Prof. Jan Adameczyk, Honorary Professor of the Silesian University of Technology and then distinguished with the Award of Minister, and defended it in 1977. He completed his DSc dissertation and defended it in 1990. The President of Republic of Poland conferred to him the title of professor in 1995. He was conferred a title of Doctor Honoris Causa in 1999 at the University of Ruse in Bulgaria, in 2007 at the Khmelnytsky National University in Khmelnytsky in Ukraine and again in 2016 at the University of Miskolc in Hungary. He is an academician – since 1992 he is a foreign Fellow of the Ukrainian Academy of Engineering Sciences, since 1999 of the Slovak Academy of Engineering Sciences, since 2005 he is a Fellow and President of the World Academy of Materials and Manufacturing Engineering, and since 2016 he is a Vice President of the Academy of Engineering in Poland. Permanently, since 1971, he works at the Faculty of Mechanical Engineering of the Silesian University of Technology in Gliwice, Poland being already since 1968 a junior assistant – as a holder of the scientific scholarship. Having got a job, he used to work as an assistant in 1971-1972, as a senior assistant in 1972-1977, as an assistant professor in 1977-1990, as a docent in 1990-1991, and in 1991-1998 as an associate professor. Since 1998 he is the full professor of the Silesian University of Technology. In 1997-2013 Prof. Leszek Adam Dobrzański, was the Director of the Institute of Engineering Materials and Biomaterials of the Silesian University of Technology, and simultaneously – in 1991-2013 was the Head of the Division of the Materials Processing Technology, Management, and Computer Techniques in Materials Science. Since 1999 he is the head of Doctoral Studies on Faculty of Mechanical Engineering in Silesian University of Technology in Gliwice. Prof. Leszek Adam Dobrzański, was elected, for three terms – in 1990-93 and 1999-2005, a Dean of the Faculty of Mechanical Engineering of the

Silesian University of Technology, performing also in 1993-1996 the function of Vice-Dean – First Deputy Dean of the Faculty. In 2012-2013 he was the Vice-Rector for Science and Industrial Co-operation of the Silesian University of Technology in Gliwice. Moreover, in 1995-1998 he was also a full professor and a Vice-Rector for Research of the Academy of Computer Science and Management in Bielsko-Biała, Poland, in 2008-2009 he worked as a full professor in the Institute of Physical Education and Physiotherapy of the Opole University of Technology in Opole, Poland, and in 2014-2015 he worked as a full professor and Vice-Director for International Co-operation of the Institute of Advanced Manufacturing Technology in Kraków, Poland.

Prof. Leszek Adam Dobrzański, speaks English, Italian, Russian and Latin. He is an expert and lecturer of the Association of Polish Mechanical Engineers (SIMP) in the field of Material Science and Heat Treatment, an Expert of European Union in Steel and Coal Programme, an expert of numerous scientific programmes realized in Poland by the National Science Centre (NCN), the National Centre for Research and Development (NCBiR), the National Information Processing Institute (OPI), the Polish Agency for Enterprise Development (PARP) and the Foundation for Polish Science (FNP), and also an Internal Auditor and a Leading Auditor in the field of Quality and he has graduated from the Pedagogical Study in the Silesian University of Technology.

## 5.2. Honours, awards, and distinctions

Prof. Leszek Adam Dobrzański, has been awarded with many distinctions and medals for his contributions for development of science and co-operation of the scientific society of Poland with the scientific societies of other countries, including being conferred triply the highest dignity of Doctor Honoris Causa in Rousse (Bulgaria), in Khmielnitsky (Ukraine) and in Miskolc (Hungary). He was awarded by the President of Poland with the following Crosses: Commander's, Officer's and Knight's of the Order of Polonia Restituta, and with the Golden and Silver Crosses of Merit, and also by the Ministries of Polish Government with the Medal of National Education Commission and Medal for contributions to the Machine Industry.

Prof. Leszek Adam Dobrzański, has been awarded by the Kingdom of Belgium with Commander's Cross of the Order „Merite de l'Innovation”, for innovation and inventive

activities. He has also the Golden Distinction of the Association of Polish Mechanical Engineers SIMP. He has also many prestigious international distinctions, including the William Johnson International Gold Medal for Lifetime Achievement in Materials Processing Research and Education by the Dublin City University in Dublin, the Gold Medal of Albert Schweizer of the World Academy of Medicine, the Gold Medal of Tadeusz Sendzimir for innovative industrial activity, Gold Medal of Ferdinand Martinengo for actions in the name of humanism, awarded at the Ferdinand Martinengo Association and the Paneuropean Union in Bratislava (Slovakia), Plaque of Honorary Member of the Clausius Tower Society in Koszalin, Honorary Award of Prof. Wiesław Chladek of Polish Medical Engineering Association in recognition for extraordinary deserts in the field of dentistry and medical engineering development in Poland, Medals of the Universities or Universities of Technology in Naples and Bologna (Italy), Plzen and Ostrava (Czech Republic), Rijeka (Croatia), Lvov and Khmelnytsky (Ukraine), Lubljana (Slovenia), and also in Poland in Poznań, Kraków, Częstochowa, and Gliwice, as well as of the Military University of Technology in Warsaw and Gdynia Maritime University, and also many international honorary awards, among others in Brisbane in Australia and in Bahrain. He has also regional distinctions, among others in Rousse (Bulgaria), and industry branch ones. He was awarded eleven times by the Minister responsible for science and higher education in Poland, mostly for his scientific books and textbooks, and for his scientific achievements, and also for his organizational achievements on a country level, moreover he was awarded many dozen times with prizes of Rector of the Silesian University of Technology in Gliwice, Poland for research projects, didactic achievements, and organisational activity. Books published by Prof. Leszek Adam Dobrzański, were honoured many times with awards at the prestigious Academic and Educational Books Fair, among others for the best technical books at the Academic Books Fair ATENA'2000, ATENA'2003 and ATENA'2005 in Warsaw, Poland for the best books at the Academic Book Fair in Wrocław, Poland in 2003 and in 2005, and also for the best academic books at the Educational EDUKACJA'2003 and EDUKACJA'2005 in Warsaw, Poland, and totally about 77 Gold, Silver and Bronze Medals on International Invention, Innovation & Technology Exhibition among others in Seoul, Korea; Kuala Lumpur, Malaysia; Moscow, Russia; Geneva, Switzerland; Taipei, Taiwan; Sevastopol, Ukraine; Warsaw, Poland; Nuremberg, Germany; Zagreb, Croatia; Kunshan, China; Brussels, Belgium; Teheran, Iran; Prague, Czech Republic; Macau, China; Foz do Iguaçu, Brazil; Bangkok, Thailand.

### 5.3. Scientific output and interests

The scientific interests of Prof. Leszek Adam Dobrzański, include materials science and materials engineering, design and operation of machines, organisation and management, within the specialisation: metal and non-metal engineering materials (metals, polymers, ceramics, and composites), functional materials, photovoltaics, metal and ceramic tool materials, light metals alloys, biomedical and dental engineering and materials, nanotechnology and nanostructural materials, gradient technologies and materials, fundamentals of production engineering, engineering materials manufacturing and processing technologies, plastic forming, thermal and thermomechanical treatment of metal alloys, powder metallurgy, surface engineering, including PVD and CVD coatings, as well as laser alloying and remelting, automation and robotisation of engineering materials processing, investigation methodology of structure and properties of engineering materials, materials design methodology, computational materials science, computer assistance of engineering tasks and didactics, applied computer science, technical and computer science education and e-learning, industrial management and foresight research.

Several main areas may be noted in the scientific output of Prof. Leszek Adam Dobrzański:

- engineering design methodology, especially the product materials and technological ones, foresight methodology development mainly for application in the surface engineering and working out the developmental strategies of surface engineering for next two decades, as well as computer aided engineering materials design, and also development of the computational materials science and computational surface engineering – he is the precursor of these scientific specialisations in Poland, to develop tools for modelling and prediction of the structure and the properties of engineering materials, mostly by using the artificial intelligence methods, including neural networks and genetic algorithms, and also numerical methods, among others for development of the computer aided materials design systems CAMD and computer aided materials selection systems CAMS, modelling and simulation of the mechanical properties of alloy steels depending on their chemical composition and technological condition, and surface layers deposited with the PVD method, and also by laser remelting and alloying, and in connection with their service properties, forecasting the TTTc

plots and forecasting of the steels hardenability based on their chemical composition, forecasting of the residual life of steels in creep service, methodology of the automated metallurgical quality assessment of castings from light alloys based on their radiographical assessment and using computer aided methods in foresight research;

- optimisation of chemical composition and heat, thermo-mechanical, and thermo-chemical treatment, and investigation of phase composition in alloy tool steels, including the high-speed ones, which resulted with the first publication in the world, based on thin foils on the transmission electron microscope and dilatometric investigations, of the description of the alloy tool steels hardening mechanisms, including the high-speed steels, with vanadium concentration above 1%, taking into account the role of the MC type interstitial carbides precipitation in martensite during soaking at tempering and of the martensitic transformation of the retained austenite during cooling from the tempering temperature, development of the purely original and patented technology of the thermo-mechanical treatment of the alloy tool steels, including the high-speed ones, which ensures not only improvement of the steel hardness and strength, but also improvement of their ductility, and thus increase of their durability confirmed in deployments, determining the silicon role in this steel group as a substitute for tungsten and molybdenum, as well as titanium and niobium as substitutes of vanadium, and also minimisation of cobalt concentration and development of a new generation of the economical grades of these steels, and also investigation of the roles of microadditions of cerium and zirconium in the alloy hot work tool steels, for improvement, among others, of forging tools thermal fatigue and also resistance to thermal shocks, development of the patented original maraging type tool steels precipitation hardened with the non-carbide non-metallic phases, and also development of the novel Powder Injection Moulding (PIM) and Metal Injection Moulding (MIM) technologies for production of the sintered tool steels, especially of the high-speed ones, and also of the sintered gradient tool materials produced, among others, using these technologies;

- development and investigation of new types of austenitic medium and high manganese steels and optimisation of their chemical composition and heat, cold and hot working plastic and thermo-mechanical treatment, and investigation of phase composition and phase transformation and structural changes to define the synergistic effect on increase of cold plastic deformation supply energy margin and hence the fracture counteraction and researching the

mutual dependence between structural mechanisms (mainly twinning and carbide-forming process) and phase transformation (mainly the martensitic transformation) during cold plastic deformation of the newly developed high-manganese steels of types TRIP, TWIP and TRIPLEX, and the structural condition of these steels caused by required refinement of austenite grains as a result of controlled recrystallization process during prior thermo-mechanical or/and thermal processing depending on micro-additives of high carbide-forming elements like Nb and Ti, in order to develop the model of mutual dependence with use of artificial intelligence methods and finding the mechanisms and sequences of structural transitions and bases for shaping the structure and positive relationship between high strength ( $R_m \geq 1000$  MPa) and high plastic properties ( $A \geq 60\%$ ) with possibly of the highest cold plasticity margin;

- development and investigation of the new hard carbide-, nitride-, and oxide coatings with titanium, aluminium, silicon, and zirconium, abrasion- and corrosion resistant, put down with the Physical Vapour Deposition (PVD) and Chemical Vapour Deposition (CVD), Atomic Layer Deposition (ALD) and the sol-gel methods with the single-, double-, and multilayer structure and gradient ones, and also the hybrid layers obtained with the ion thermo-chemical treatment methods, or laser alloying and PVD, on the different substrates, including (1) tool steels substrates, including the high-speed ones, sintered carbides, tool cermets, oxide-, nitride-, silicon tool ceramics, including sialons, ensuring the significant improvement of the exploitation properties of tools, especially the cutting ones, at high cutting speeds and at dry cutting without using cooling fluids, including investigation of the diffusion and adhesion phenomena deciding adherence of coatings to the substrate and between layers of which they are composed (2) aluminium, magnesium and titanium alloys; (3) multi- and monocrystalline silicon;
- technology development and optimisation and investigation of strengthening mechanisms of the surface layers, including the gradient ones, prepared using the high power diode laser by remelting, alloying, cladding and dispersion hardening using carbides and ceramic particles on the different substrates, including (1) tool steels, especially on the hot work ones, but also on the high-speed ones, to extend exploitation life of tools and constructional elements, and their abrasion wear and corrosion resistance, as well as thermal fatigue respectively, and hybrid methods consisting in merging the laser remelting, alloying, cladding and dispersion hardening

and/or alloying with the substrate powder metallurgy and/or with PVD method of coatings deposition, (2) aluminium, magnesium and titanium alloys and also employment of laser technologies for texturing the surface layers of the mono- and polycrystalline silicon for the photovoltaic applications and in production technology of the photovoltaic cells (e.g., for deposition of electrodes); and also the use of laser energy for constitution of massive and porous engineering materials by the use of Selective Laser Melting (SLM) and Selective Laser Sintering (SLS);

- development and investigation of the new methods of nanotechnology including m.in. Atomic Layer Deposition (ALD), Chemical Vapour Deposition (CVD) and Co-Electrospinning methods for introduction of the new types of the nanocomposite materials (1) with a light metal matrix (Al, Mg) and with carbon nanotubes (Al+MWCTN, Al+SWCNT, Mg+MWCTN, Mg+SWCNT), (2) with a polymer matrix with nanowires (Cu, Ag, Au, Pd, Pt) as light composites with high aesthetic values (transparent) with improved electrical and thermal properties (polymer + nanowires Cu, Ag, Au, Pd, Pt), (3) in a gas shield with polymer single- and double-component nanofibers with a highly developed surface, porous materials with high absorptivity, air permeability, barrierity and low density (polymer + air) with a possibility of filling pores with active medicinal substances, with a broad spectrum of a practical applications areas in the future, e.g. in the medicine, in sensorics and automatics as functional materials, using the unexpected effects of formulating such materials' functional properties;
- technology development and optimisation and investigation of new bioactive, biodegrading, biocompatible materials, including natural and engineering polymers, titanium and its alloys, composites with polymeric and metallic matrices, nanocomposites to produce implants, including personalised scaffolds of tissues and bones, for regenerative medicine for to reconstruct sections of bone losses in maxillofacial surgery, restorative dentistry, laryngology, including otolaryngology, orthopaedics and traumatology, and to supplement soft tissues, e.g. in case of oesophagus and blood vessels prosthetics/implantation, where in particular bone or organ stumps are not in contact, with the use of among others; Selective Laser Melting (SLM) and Selective Laser Sintering (SLS), the Physical Vapour Deposition (PVD) and Chemical Vapour Deposition (CVD), Atomic Layer Deposition (ALD) and the sol-gel methods, electrospinning including coaxial, emulsion and melt ones and using among others. nanofibers, nanowires and nanotubes, as well as development and research new innovative porous

biomimetic materials created with the Selective Laser Sintering (SLS) method for titanium, corundum and zirconium scaffolds, sintered by laser in a continuous manufacturing process, consisting of a solid core and a porous, strongly developed surface layer, will be optionally coated with nanostructural surface layers of an osteoconductive hydroxyapatite or will form a core of a composite created by injecting polymers from the group of acrylates and/or elastomers, under pressure, into the pores of the titanium scaffold surface;

- development and investigation of the new technologies of the photovoltaics and new photovoltaics materials, including polycrystalline silicon treated using the modern technology of solar cells with the laser surface texturing and laser sintering of the front electrodes with the  $\text{Al}_2\text{O}_3$  antireflection coating for aimed at minimising the optical and electrical losses occurring in the solar cell, among others, by reducing the reflectivity from the front surface of the solar cell, reducing the resistance at the semiconductor-front electrode contact, and also by increasing the quantum efficiency, as well as development and investigation of the modern photovoltaic structures and their integration with construction materials for Automotive Integrated Photovoltaic Composites, Aerospace Integrated Photovoltaic Composites and Building Integrated Photovoltaic Composites in order to acquire knowledge about the influence of the structure of the phase and chemical composition of an active photovoltaic layer, electrode layers from nanostructural carbon materials containing carbon nanotubes, graphene or foamed graphite, their mutual adhesion and methods of depositing these layers on photovoltaic properties of multi-layer composite materials and the research on manufacturing a layer composite material with an active photovoltaic layer on a hard and flexible, conductive and non-conductive substrate with a possibility of their depositing on small and large surfaces as well as using carbon materials as conductive layers for achieve a final result of developing the basics of shaping the structure and properties of photovoltaic layer materials and dye-sensitized solar cells (DSSC);
- technology development and optimisation and investigation of structure and properties of composite materials with various matrix types (metal, ceramic, or polymer) and produced using various technologies, among others obtained with powder metallurgy methods, infiltration, PIM, MIM, hybrid one using alloying, cladding and dispersion hardening using the high power laser diode to obtain composites with the gradient structure, produced, among others, using the reinforcing or filling materials with the nanocrystalline structure obtained from the amorphous



strips by thermal crystallisation or by high-energy milling, of various uses, including the functional ones (e.g., with the soft or hard magnetic properties, or smart ones with the controlled magnetostriction), tool ones (including those with the gradient of chemical- and phase compositions, and properties), as well as the special ones (e.g., corrosion resistant, as the duplex type steels or the low density materials, like the porous aluminium oxide infiltrated with aluminium), for the biomimetic applications (e.g., for the oesophagus endoprotheses or for the fixed dental prostheses) and also development and investigation of the of the newly developed composite materials with the matrix from aluminium alloys, fabricated in either of two methods: using mechanical milling and succeeding compacting and hot extrusion, or alternatively, pressure infiltration with the synergetic effect of the dispersive reinforcing phase in the form of the natural halloysite or carbon nanotubes and precipitation hardening during heat treatment and research the influence of these phase changes on structure and mechanical- and physical and chemical properties.

- investigation of the theoretical fundamentals of phase transformations, including those occurring during crystallisation and melting of light metals alloys, mostly of magnesium and aluminium, using the versatile simulator of metallurgical analyses employing the derivative analysis, and also development of methodology of this investigation using the neural networks and other artificial intelligence methods, and also investigations of phases transformations occurring in these alloys in the solid state during their heat treatment, among others, using the analytical transmission electron microscopy, spectral analysis in micro-areas, and the X-ray analysis, for optimisation of chemical composition and technology of their production and processing, also using the high power diode laser;
- development of design and technology of tools for the coal mining combines, encompassing many patented solutions and registered designs, implemented in several metal alloys processing enterprises, at manufacturers of mining tools and in coal mining enterprises, pertaining, among others, to the thermo-mechanical treatment of mining cutters shanks, ensuring their manufacturing costs reduction and increase of their reliability, because of the simultaneous increase of their strength and ductility, automation of the brazing of cutting inserts using the newly developed binding materials, and also development of the new economical cobaltless sintered carbides synthesised with High Isostatic Pressure (HIP), with properties exceeding the characteristics of the conventional grades.

## 5.4. Publication and projects output

The published creative scientific output of Prof. Leszek Adam Dobrzański, of the international significance pertains to materials science, surface engineering, nanotechnology, computer aided engineering materials design and modelling of their structure and properties. His scientific output includes about 2220 scientific publications with others currently in printing, including about 47 books and monographs i 26 chapters in books and monographs, 147 papers in English in journals from the Journal Citation Reports of Thomson Reuters in Philadelphia, and 48 without IF but covered in the Web of Science Core Collection, over 460 papers in English in journals covered in the Directory of Open Access Journals, as well as over 460 papers i 80 announcements in English in other international journals, often foreign ones and in scientific conference proceedings and in proceedings of the scientific conferences of worldwide range, and also publications in Chinese, Italian, Russian, and Ukrainian languages. Over 400 papers i 120 announcements authored or co-authored by him were published in Polish in domestic journals and conference proceedings. He is the author or co-author of 51 patents and scientific editor of over 360 joint publications, including many editions of the scientific journals of worldwide circulation edited by him in English, as well as of proceedings of the international scientific conferences. At least 10,000 times his works are cited in world journals according to Web of Science (WS), Scopus (SC), Google Scholar (GS) and Harzing's Publish or Perish and also in many domestic ones; number of citations: 8963 (GS), 2566 (SC), 1381 (WS), h-index: 39 (GS), 24 (SC), 18 (WS). Moreover, his scientific output includes also about 100 lectures invited by organisers of the international scientific conferences in many countries of the world on all continents.

Prof. Leszek Adam Dobrzański was a manager or a contractor of about 150 unpublished works as scientific and research projects, including many made to the industry needs, including about 30 own and supervisory ones, as well as one ordered and one developmental, among others: Head of the 6 structural projects in the framework of the Operational Programmes: Innovative Economy, Human Capital and Regional one worth ca. 100 million PLN, including FORSURF of the foresight type within the framework of the Innovative Economy Operational Programme (2009-2012), MERMFLEG within the framework of the Silesian Regional Operational Programme (2010-2013), LANAMATE within the framework of the Infrastructure

and Environment Operational Programme (2010-2014) pertaining both to the laboratory facilities level improvement in the area of nanotechnology, materials processing technologies and computational materials science, INFONANO (2009-2014), QUAPINFO (2011-2015), NANATRIM (2011-2015) pertaining to the priority branches of studies within the Human Capital Operational Programme, and also he was heading the task in the framework of the BIO-FARMA project (2010-2012), within the framework of the Infrastructure and Environment Operational Programme pertaining to the laboratory facilities level improvement in the area of nanotechnology and materials research. In the last 5 years he was a Head of 13 domestic grants founded by the National Science Centre (NCN), State Committee for Scientific Research (KBN) and Ministry of Science and Higher Education (MNiSzW). He was also the Contractor of one equipment project awarded by the Foundation for Polish Science (FNP). He was also the Contractor of about 30 international projects, among others EU-INTEGRATION within the framework of TEMPUS-PHARE programme, a dozen or so within the CEEPUS programme, and within the framework of many contracts within the framework of Socrates-Erasmus and LLP Erasmus programmes. In the framework of those projects ca. 650 Polish students and ca. 150 scientific staff went to Czech Republic, Slovakia, Germany, Finland, Denmark, the Netherlands, Belgium, France, Spain, Portugal, Italy, Slovenia, Croatia, Bosnia and Herzegovina, Greece, Bulgaria, Romania, Ireland, Great Britain, Norway, Russia, Ukraine, 69 students and ca. 85 scientific staff to Turkey. Altogether ca. 93 students and ca. 500 scientific staff from many countries also came. Ca. 55 students and ca. 15 scientific staff came from Turkey. Moreover, the exchange with Canada, USA, Egypt was organised and scientific staff came from 50 countries of the world, mainly invited ones and as delegates of scientific conferences.

Prof. Leszek Adam Dobrzański, is the author of 47 scientific books widely known in Poland and used at many Universities for teaching in the area of materials science and engineering, with the original editorial form, including some printed in full colour, from which one may mention „Materiały inżynierskie i projektowanie materiałowe. Podstawy nauki o materiałach I metaloznawstwo” (*“Engineering materials and materials design. Fundamentals of materials science and physical metallurgy”*), Wydawnictwa Naukowo-Techniczne, Warszawa, ed. II amended and supplemented, 2006, 1600 pages, „Metalowe materiały inżynierskie” (*“Metal engineering materials”*), Wydawnictwa Naukowo-Techniczne,

Warszawa, 2004, ca. 900 pages (award of Ministry of National Education and Sport), „Podstawy nauki o materiałach i metaloznawstwo. Materiały inżynierskie z podstawami projektowania materiałowego” (*“Fundamentals of materials science and physical metallurgy. Engineering materials with elements of materials design”*), Wydawnictwa Naukowo-Techniczne, Warszawa, 2002, ca. 1500 pages (award of Ministry of National Education and Sport), „Leksykon materiałoznawstwa. Metale. Polimery. Ceramika. Kompozyty” (*“Lexicon of materials science. Metals, Polymers. Ceramics. Composites”*) (co-author and scientific editorship), Verlag Dashöfer, 2 editions, lastly in 2004-2014, ca. 6000 pages, „Zasady doboru materiałów inżynierskich z kartami charakterystyk” (*“Principles of engineering materials selection with specifications sheets”*) (co-author and scientific editorship), Wydawnictwo Politechniki Śląskiej, 2 editions, last in 2001, ca. 850 pages., „Metaloznawstwo z podstawami nauki o materiałach” (*“Physical metallurgy with elements of materials science”*), 5 editions, lastly by Wydawnictwa Naukowo-Techniczne, Warszawa, 1999, ca. 700 pages (award of Ministry of National Education and Sport) „Mikroskopia świetlna i elektronowa” (*“Light and electron microscopy”*) (co-author), 2 editions, lastly by Wydawnictwa Naukowo-Techniczne, Warszawa, 1988, ca. 300 pages (award of Ministry of National Education), „Badania własności fizycznych” (*“Testing of physical properties”*) (co-author), 2 editions, lastly by Wydawnictwa Naukowo-Techniczne, Warszawa, 1988, ca. 300 pages (award of Ministry of National Education), „Metaloznawstwo i obróbka cieplna materiałów narzędziowych” (*“Physical metallurgy and heat treatment of tool materials”*) (co-author and scientific editorship), Wydawnictwa Naukowo-Techniczne, Warszawa, 1980, ca. 600 pages (award of Ministry of National Education). In 2007-2009 he published in the *Publishing House of the Silesian University of Technology* a series of academic books of more than 2100 pages in total, with the original set of 80 instruction sheets for laboratory exercises and an atlas of several hundred metallographic structures of various engineering materials. These were the following academic books successively: „Wprowadzenie do nauki o materiałach” (*“Introduction to materials science”*), 2007, ca. 315 pages, „Podstawy kształtowania struktury i własności materiałów metalowych” (*“Fundamentals of shaping structure and properties of metal materials”*), 2007, ca. 320 pages, „Metaloznawstwo opisowe stopów żelaza” (*“Descriptive physical metallurgy of iron alloys”*), 2007, ca. 370 pages, „Metaloznawstwo opisowe stopów metali nieżelaznych” (*“Descriptive physical metallurgy of non-ferrous metals alloys”*), 2008, ca. 480 pages,

„Niemetalowe materiały inżynierskie” (*“Nonmetal engineering materials”*), 2008, ca. 405 pages, and „Podstawy metodologii projektowania materiałowego” (*“Fundamentals of materials design methodology”*), 2009, ca. 325 pages. In 2009 he published in International OCSCO World Press Publishing House, Gliwice a scientific book „Creating structure and properties of engineering materials and biomaterials”, 2009, 174 pages, and in 2011 „Obróbka powierzchni materiałów inżynierskich” (*“Engineering materials surface treatment”*) (co-author), 480 pages. In 2012-2013 he published in the *Publishing House of the Silesian University of Technology* published the tetralogy of the scientific books, including author’s scientific book „Podstawy nauki o materiałach” (*“Fundamentals of materials science”*), 2012, 772 pages, as a co-author of a scientific book „Kształtowanie struktury i własności powierzchni materiałów inżynierskich” (*“Formation of structure and properties of engineering materials”*), 2013, 492 pages, author’s scientific book „Metaloznawstwo opisowe”, (*“Descriptive metal science”*), 2013, 814 pages and team work under his authorship scientific edition „Ćwiczenia laboratoryjne z inżynierii materiałowej i nanotechnologii” (*“Laboratory classes on materials science and nanotechnology”*), which was published by International OCSCO World Press as one of Issues of Open Access Library, 2013, 763 pages. Lately he has published also a few joint scientific publications including „Ćwiczenia laboratoryjne z nauki o materiałach” (*“Laboratory classes on materials science”*), 2013, 215 pages, „Implanty śródszpikowe w osteosyntezie kości długich” (*“Intramedullary osteosynthesis implants in long bones”*), 2012, 150 pages, „Podstawy metalurgii proszków i materiały spiekane” (*“Fundamentals of powder metallurgy and sintered materials”*), 2012, 156 pages, „Struktura i własności stopów Mg-Al-Zn” (*“Structure and properties of Mg-Al-Zn alloys”*), 2012, 319 pages, „Obróbka powierzchni materiałów inżynierskich” (*“Engineering materials surface treatment”*), 2011, 480 pages, „Struktura i własności wieloskładnikowych powłok na węglkach spiekanych oraz ceramice azotkowej i sialonowej” (*“Structure and properties of composite coatings on cemented carbide and nitride and sialon ceramics”*), 2015, 173 pages, and „Polymer nanofibers produced by electrospinning applied in regenerative medicine”, 2015, 168 pages, published by International OCSCO World Press in Gliwice. He is also author or co-author many chapters in monographs published in Poland and abroad.

The output of Prof. Leszek Adam Dobrzański, includes also scientific editing of 360 issues of scientific journals and conference proceedings (mainly in English of the worldwide

range). This input includes, among others, edited by him, as the Editor-in-Chief: 111 issues of “Journal of Achievements in Materials and Manufacturing Engineering” (a journal from the Directory of Open Access Journals list) of the international publishing house (OCSCO), 107 issues of “Archives of Materials Science and Engineering” (a journal from the Directory of Open Access Journals list), 32 issues of “Open Access Library”, and 5 issues of “Archives of Materials Science” as a unit of the World Academy of Materials and Manufacturing Engineering and Materials Science Committee of the Polish Academy of Sciences, 6 issues of “International Journal of Computational Materials Science and Surface Engineering”, and next 8 issues of “Archives of Computational Materials Science and Surface Engineering” (a journal from the Directory of Open Access Journals list) as a unit of the Association of Computational Materials Science and Surface Engineering, as well as 41 issues of „Prace Studenckich Kół Naukowych” (*“Fascicles of Students’ Scientific Societies”*) published in Polish by the international publishing house (OCSCO), containing students’ papers. He was the Invited Editor of 9 special issues of “Journal of Materials Processing Technology” in English of the Elsevier Publishing House in the Netherlands included in the Master Journal List of Thomson Reuters formerly known as the Institute of Scientific Information (ISI), also about 10 special issues of the International Journals of the Inderscience Publishers in Switzerland and Great Britain, including “International Journal of Materials and Product Technology”, “International Journal of Microstructure and Materials Properties”, “International Journal of Manufacturing Technology and Management”, “International Journal of Surface Science and Engineering”. He was also the Invited Editor of a dozen or so special issues of the scientific journals in Poland, including „Ochrona przed korozją” (*“Corrosion protection”*), „Rudy i metale nie-żelazne” (*“Non-ferrous ores and metals”*), „Przegląd Mechaniczny” (*“Mechanical Review”*), „Przegląd Spawalnictwa” (*“Welding Review”*), „Kompozyty” (*“Composites”*), „Mechanik” (*“Mechanic”*), „Przegląd Odlewnictwa” (*“Foundry Review”*), „Hutnik – Wiadomości Hutnicze” (*“Metallurgist – Metallurgical News”*), „Nauka – Innowacje – Technika” (*“Science – Innovations – Technology”*), „Czystsza Produkcja w Polsce” (*“Cleaner Production in Poland”*), „Inżynieria Maszyn” (*“Machine Engineering”*), „Zeszyty Naukowe Politechniki Śląskiej, seria Mechanika” (*“Scientific Fascicles of the Silesian University of Technology, Mechanics series”*). He was also the editor and publisher of 40 joint publications published as conference proceedings, mostly international, in English, but also of the domestic ones.

## 5.5. Didactic output and achievements in development of scientific cadres

Prof. Leszek Adam Dobrzański, is a creator and leader of the Scientific School – actively created by him new scientific specialisation “Computational materials science and surface engineering”, surface engineering, and advanced engineering materials and materials processing technologies, which resulted in promoting by him in person of a group of 55 completed PhD theses, 4 PhD theses in final state of the edition and next 5 PhD dissertations in progress, as well as promoting ca. 1000 MSc and BSc theses, including four persons who have received their university diplomas simultaneously in Horsens in Denmark, and also ca. 50 completed in Poland by foreign students from Italy, Portugal, Spain, Turkey, Slovenia, Slovakia, Bulgaria. Lastly he encouraged successfully 25 doctors, who acquired the scientific title of the DSc and 10 other DSc doctors, who have got their scientific title of a professor and next cases are in progress. Moreover, he was the initiator of conferring 7 titles of the Honorary Professor of the Silesian University of Technology and 3 dignity of Doctor Honoris Causa of the Silesian University of Technology. His PhD students were awarded with the Prime Minister’s prize, were granted 3 times scholarships of the Foundation for Polish Science, 15 times FIAT concern scholarships, the several times the Prof. Jan Adamczyk Honorary Award given by the World Academy of Materials and Manufacturing Engineering and many times scholarships of the International Visegrad Fund, and also several prizes at the international conferences. Three of his graduates were conferred the Omnium Studiosorum Optimo medal for the best graduates of the Silesian University of Technology and his most outstanding individual students were granted several times scholarships of the Minister responsible for higher education and of Hugo Kołłątaj Foundation. He is an initiator and main author of the implementation of principles of the Bologna Chart and the ECTS system in his mother Faculty and completely new syllabi for 7 branches of studies. He created 3 new and completely original branches of studies “Nanotechnology and Materials Processing Technology”, “Applied Computer Science with Computational Materials Science” and “Materials Engineering” with educational profile “Dentistry Engineering” in the framework of the INFONANO project within the Human Capital Operational Programme sponsored by the European Union. For more than a dozen years he is the head of a dozen or so specialisations. As an active academic

teacher he regularly delivers lectures from many subjects for which he has worked out a complete set of computer presentations and other teaching aids. Usually ca. 300-500 students come to each lecture.

He has developed the internet based teaching and administrative environment, and the e-learning platform organised by him is one of the most extensive ones in Poland. The issues of usability and efficiency of employing the e-learning methods in the materials engineering didactics are also the topics of two PhD theses completed under his supervision, and also were addressed by many diploma projects promoted by him, mostly the MSc ones, especially those majoring in “Technical and computer science education”. He cares actively for development of the Students’ Scientific Activity, and 10% of all Students’ Scientific Societies of all Silesian University of Technology Students’ Scientific Societies were active in the Institute of Engineering Materials and Biomaterials. He was the supervisor of several dozen students with the individual courses of studies, studying according to plans and syllabi worked out individually by him, including many unique specialisations, among others, in the scope of the “Computational materials science” and “Computer aided materials engineering”, and currently within the “Nanotechnology” and “Dentistry Engineering”. Many of these students took up their PhD studies, and about 50 of them has completed them already and were awarded the degree of a doctor of philosophy. He participated in the refereeing process of more than 170 in total candidates to degrees of a doctor of philosophy and doctor of science, as well as the titles of professor and professor positions in front of ca. twenty Boards of Faculty, inclusive in those in US, Malaysia, Bulgaria, and Slovenia. He worked out also many opinions on BSc and MSc theses, books, and many scientific papers in many countries of the world, and also many opinions pertaining to appointing to positions of assistant and assistant professors, and many opinions of the research projects in Poland, Hong Kong, Slovenia, Brazil, Portugal, Czech Republic and other countries, as well as more than 200 in various Operational Programmes, inclusive also ca. 10 against the order of the Foundation for Polish Science, Ministry of Science and Higher Education, Polish Agency for Enterprise Development, also National Centre of Research and Development and National Science Centre. It attests to his outstanding influence on the scientific and professional development of the very big group of the young scientific cadres and to the exceptional recognition of the scientific circle for his scientific competences.



## 5.6. Organisational achievements

Prof. Leszek Adam Dobrzański since 1999 has been the head of Doctoral Studies on Faculty of Mechanical Engineering in Silesian University of Technology in Gliwice.

In 1997-2013 Prof. Leszek Adam Dobrzański, was a Director of the Institute of Engineering Materials and Biomaterials of the Silesian University of Technology, with a staff of ca. 140 currently, including about 20 professors and doctors of science, being one of the biggest scientific units in the area of materials engineering in Poland, created from his initiative as a result of development and the biggest scientific unit of the Faculty of Mechanical Engineering in the Silesian University of Technology. The Institute of Engineering Materials and Biomaterials has been awarded as the unique University unit in Poland with the British Standard Institution BSI Certificate in the quality management system area according to ISO 9001:2001 standard. Prof. Leszek Adam Dobrzański simultaneously in 1991-2013 was the Head of the Division of the Materials Processing Technology, Management, and Computer Techniques in Materials Science, consisting mostly of his Alumni, including 5 professors and doctors of science, and about 35 doctors of philosophy and ca. 25 PhD students.

Prof. Leszek Adam Dobrzański, was elected, for three terms – in 1990-93 and 1999-2005, a Dean of the Faculty of Mechanical Engineering of the Silesian University of Technology, performing also in 1993-1996 the function of Vice-Dean – First Deputy Dean of the Faculty. The laboratory base of the Faculty reached the European level then, conducting to education of the graduates sought for at the labour market. The fundamental changes in the Faculty structure and activity occurred then and it had become one of the 3 best faculties of mechanical engineering in Poland with the great international significance. Reorganisation of the didactic process at the Faculty occurred then, the Bologna Chart principles and the ECTS, as well as the totally new syllabi at 4 branches of studies were implemented (including a dozen or so didactic specialisations, whose head has been Prof. Leszek Adam Dobrzański, among others “Computational Materials Science” and “Computer Aided Materials Engineering”), preparing them for accreditation, which was carried out with great success by the State Accreditation Committee in 2006 at all 4 branches of study, with the outstanding result at the “Mechanics and Machine Design”. It was then, when for several years education was made possible for ca. 1000 students per year in the Faculty off-campus abode in Dąbrowa Górnicza. Lastly, after

many discussions and circle consultations, he had worked out his author's and entirely original concepts along with the complete documentation and syllabi of 2 new concepts in the country scale macro-branches of study "Applied Computer Science with Computational Materials Science" and "Nanotechnology and Materials Processing Technologies", approved by the Scientific Council of Faculty and Senate of the Silesian University of Technology, initiated currently from the academic year 2009/2010 and the branch of studies "Materials engineering", including, among others the "Dentistry engineering" profile to be initiated at the beginning of the academic year 2010/2011. All three newly created branches are recognised as priority ones and are comprised by the 4 years long "INFONANO" project headed by him financed from the means of the European Fund for Regional Development within the framework of the Human Capital Operational Program granted by the Ministry of Science and Higher Education. The goal of the LANAMATE project headed by him financed from the means of the European Fund for Regional Development within the framework of the Infrastructure and Environment Operational Programme granted by the Ministry of Science and Higher Education is to improve the laboratory facilities level in the area of nanotechnology, materials processing technologies and computational materials science. He was headed also MERMFLEG project within the framework of the Silesian Regional Operational Programme pertaining both to the laboratory facilities level improvement in the area of materials research. In the framework of the BIO-FARMA project he was organized top modern Electron Transmission Microscopy Laboratory financed from the means of the European Fund for Regional Development within the framework of the Infrastructure and Environment Operational Programme granted by the Ministry of Science and Higher Education. He was also the head of the FORSURF project financed from the means of the European Fund for Regional Development within the framework of the Human Capital Operational Programme granted by the Ministry of Science and Higher Education on the foresight of the advanced surface technologies in Poland 2020-2030. For 5 terms he was a member of the Senate of the Silesian University of Technology, in which he performed, among others, a function of the President of the Senate Statute Commission, and the statute authored by him, worked out in 1991, after some necessary amendments resulting from modifications of the state regulations, is still binding at the Silesian University of Technology in Gliwice, Poland. In 2011-2013 he was a member of Rector's Commission for academic staff and in 2012-2013 he was the Vice-Rector for Science and Industrial Co-operation of the Silesian University of Technology.

Furthermore Prof. Leszek Adam Dobrzański, in the years 1995-1998 was the Vice-Rector for Science of The College of Informatics and Management in Bielsko-Biała, and in the years 2013-2015 was Vice-Director for International Co-operation of the Institute of Advanced Manufacturing Technology in Kraków.

Prof. Leszek Adam Dobrzański, is very active in the area of coordination of science, didactic activity, and publishing activity in Poland, to consolidate the domestic scientific society, being elected for several terms, and also currently a member of the Presidium of the Materials Science Committee of the Polish Academy of Sciences (PAS), a president of the Metallic Materials Section of this Committee, a member of the Foundry Commission of the Polish Academy of Sciences Branch in Katowice, a member of the CODATA Committee at the Presidium of the Polish Academy of Sciences, Member of several Sections of the Metallurgy Committee of the Polish Academy of Sciences, and Committee of Machine Design of the Polish Academy of Sciences, and previously also the president of the Commission of Materials Science and Materials Engineering of the Polish Academy of Sciences Branch in Katowice, and a secretary of the Committee of the Polish Academy of Sciences for Co-operation with the European Materials Research Society and he is the Vice President of the Academy of Engineering in Poland. He belongs to the founders group of the Polish Materials Science Association, where for 3 terms he was a member of its Main Board. He was the vice-president of the Branch Board of the Association of Polish Engineers and Mechanics (APEM – SIMP) for many years, and in 1999-2005 he was the President of the Permanent Conference of Deans of the Mechanical Engineering Faculties of the Polish Universities of Technology. In 2006-2009 he has been a member of the Main Council of Higher Education in Poland, where he was active in working out the projects of teaching standards of a dozen or so branches of technical studies, approved by the Ministry of Science and Higher Education, among others, “Materials engineering”, “Technical and informatics education”, “Production management and engineering”, “Automation and robotics”, “Mechanics and machine design”, “Biomedical engineering” and “Transport”. He is/was a member of several other scientific societies, including the Polish Association of Microscopy and Programme Boards of several Polish scientific journals, including among others „Archiwum Odlewnictwa Polskiej Akademii Nauk” (currently “*Archives of Foundry Engineering*”), „Inżynieria Materiałowa” (“*Materials Engineering*”), „Inżynieria Maszyn” (“*Machine Engineering*”), „Przegląd Spawalnictwa”

(“*Welding Review*”), and „Materiały i Technologie” (“*Materials and Technologies*”) and Editorial Board Member of the “Conference Papers in Materials Science” . He was the chairman of the assessment team of the Accreditation Committee for Universities of Technology in the “Materials engineering” discipline, and an expert of the State Accreditation Committee in the area of “Technical and computer science education”, and an expert of the Minister of National Education and Sport for teaching standard in the area of „Technical and informatics education”.

Prof. Leszek Adam Dobrzański, is a member of Interdisciplinary Team for Programme of research infrastructure support within the framework of Polish Science and Technology Fund of Ministry of Science and Higher Education as Minister’s consultative body, he is a member of Steering Committee of Technical Assistance Operational Programme with Ministry of Regional Development, he is Vice-President of National Council of the Metal Forming Institute in Poznan, he was a member of Scientific Council of Centre of Polymer and Carbon Materials of the Polish Academy of Sciences in Zabrze and member of Assembly of Collage of Enterprise in Gliwice. In years 2006-2009 he was a member of Steering Committee of Polish Steel Technology Platform and in years 2004-2006 he was a member of Board of Supervisors of The Polish Steel Association in Katowice. Since 2006 he is the President of World Academy of Materials and Manufacturing Engineering, and since 2007 also the President of Association of Computational Materials Science and Surface Engineering. He is the Editor-in-Chief of 2 scientific monthly referred by Directory of Open Access Journals titled: „Journal of Achievements in Materials and Manufacturing Engineering” since 2006 and “Archives of Materials Science and Engineering” since 2007 (since 2009 also referred by Scopus) and since 2009 scientific quarterly titled: “Archives of Computational Materials Science and Surface Engineering” and since 2011 monthly “Open Access Library”, in which only monographs, within DSc (habilitation) dissertations are being published. He is a member of a few other scientific societies including the Polish Society for Microscopy, the Association of Polish Mechanic Engineers, the Polish Society for Materials Science. Prof. Leszek Adam Dobrzański, has also gained significant organizational experience over twenty five years ago by social working in housing co-operative movement including among others fulfilling social functions of President of Supervisor Board of Gliwice Housing Co-operative, Member of Central Board of House Building Co-operative Union, and then Supervisor Board of Housing Co-operative

“Szobiszowice” in Gliwice and in few following years social Board President of Housing Co-operative of Single-family houses “Batalionu Kosynierów” in Gliwice.

## 5.7. Achievements in the international co-operation and foreign activity

Prof. Leszek Adam Dobrzański, develops widely foreign co-operation of the Polish scientific society and activities promoting this society in the international arena. Several dozen important and prestigious scientific conferences, with the worldwide range currently, were organised under his guidance, including 22 times AMME „Achievements in Mechanical and Materials Engineering”, 19 times CAMS – CAM<sup>3</sup>S „Contemporary Achievements in Mechanical, Manufacturing and Materials Science”, XIV Physical Metallurgy Conference AMT’95 “Advanced Materials and Technologies” in 1995, and the International Scientific Conference AMPT’2005 “Advanced Materials and Processing Technology”, which was held in Poland, and was, moreover, organised abroad many times, including 4 times in Ireland and in Portugal, Spain and Malaysia, USA, Korea and Bahrain, and the next one is planned in Brazil, and also three times the Worldwide Scientific Congress “Congress on Materials and Manufacturing Engineering and Technologies” COMMENT’2005, 2007, and 2009, in these scientific events several hundred participants take part usually from 30-45 countries of the world. These conferences offer significant possibilities to enter into the international co-operation to many Polish academic centres, and on the other hand they offer an important potential for the promotion of Poland among citizens of many countries, every exotic sometimes. He is also very active in organisation of the International Materials Symposium in last year 15<sup>th</sup> time by Pamukkale University in Denizli, Turkey as Co-chairman of Organising Committee. He is the initiator of establishing the world academy of sciences – the World Academy of Materials and Manufacturing Engineering, where scholars from 45 countries have elected him the President in the general direct election. He is also the initiator and President of the international scientific society – the Association of Computational Materials Science and Surface Engineering. These organisations, from his initiative, in co-operation with the Materials Science Committee of the Polish Academy of Sciences, and the International Federation of Heat Treatment and Surface Engineering, publish the monthly “Journal of

Achievements in Materials and Manufacturing Engineering”, of which he is the Editor-in-Chief, circulated in 50 countries of the world, of which 102 issues have been published to date with ca. 2100 scientific papers, which offers important promotion potential in the international arena for the Polish scientific achievements and for focusing on Poland the interest of the big number of the foreign scholars. Currently publishing started in Switzerland of the next bimonthly established by him under the patronage of these organisations – “International Journal of Computational Materials Science and Surface Engineering”, transformed later into the independent journal “Archives of Computational Materials Science and Surface Engineering” published in 2009-2010 as a quarterly under the auspices of the Association of Computational Materials Science and Surface Engineering. On 1<sup>st</sup> January 2007 the Authorities of the Polish Academy of Sciences entrusted him with the function of the Editor-in-Chief of the quarterly “Archives of Materials Science” (formerly „Archiwum Nauki o Materiałach Polskiej Akademii Nauk” – “*Archives of Materials Science of the Polish Academy of Sciences*”) as an organ of the Materials Science Committee of the Polish Academy of Sciences, which he converted into the monthly “Archives of Materials Science and Engineering”, currently published by the World Academy of Materials and Manufacturing Engineering for 8 years, ensuring also this journal being distribution to ca. 100 most important National and Scientific Libraries and to the individual receivers in 50 countries of the world, and also referred in abstracts and citations database Scopus. Started from 2011 the monthly “Open Access Library” is published by the World Academy of Materials and Manufacturing Engineering. Currently the journals edited by him are covered in the Directory of Open Access Journals. For several years he was also the Deputy Editor-in-Chief of the “International Journal of Manufacturing Technology and Management”, a European Editor of the “International Journal of Materials and Product Technology”, and a member of Boards and Editorial Offices of the “International Journal of Nanomanufacturing”, “International Journal of Microstructure and Materials Properties”, “International Journal of Surface Science and Engineering” in Switzerland and Great Britain, “Journal of Materials Processing Technology” in the Netherlands, and of “Problems of Tribology” in Ukraine. He is also the Member of the Scientific Editorial Boards a some other scientific Journals in Poland, India, Ireland, Slovenia, Bulgaria, Malaysia and Romania. In this way he generates continuously and in a systematic way the possibilities of publishing their own works in the scientific journals of the worldwide circulation to many Polish and foreign scholars.

Prof. Leszek Adam Dobrzański, was appointed into many scientific bodies, including – apart from the fellowship of the Ukrainian Academy of Engineering Sciences and Slovak Academy of Engineering Sciences – being appointed as a member of the Central Qualification Committee for Scientific Degrees of Slovakia, a member of the Council for Qualification for the Professor Position of the University in Kuala Lumpur in Malaysia, a foreign member of the Board of the Faculty of Machine Engineering in Vysoka Skola Banska in Ostrava, as well as the visiting foreign member of the Scientific Board of the Faculty of Mechanical Engineering of the University in Rijeka in Croatia, a member of the Commission for docent degree of the Scientific Board of the Faculty of Mechanical Engineering of the University in Zilina in Slovak Republic and West Bohemia University in Plzen in Czech Republic. Some of these functions were held on a term basis, so he does not perform them now. In June 2004 he participated in a meeting in Cork in Ireland and belongs to the elite group of creators of the European Materials Forum. He was selected many times to be a member of the Programme Committees of many cyclic international scientific Conferences (in Ireland, Italy, Spain, Portugal, Slovenia, Croatia, Bosnia and Herzegovina, Hungary, Bulgaria, Slovakia, Czech Republic, Ukraine, Germany, Malaysia, Hong Kong, Japan, USA, South Korea, Brazil, Bangladesh, Canada, Singapore, Bahrain, Australia, Turkey, Tunisia, Taiwan, China, Brazil, France, The United Arab Emirates). He was many times a visiting professor at the universities in: Dublin and Cork (Ireland), Manchester and Glasgow (Great Britain), Horsens (Denmark), Koeln, Dresden, Wuerzburg, Schweinfurt and Freiberg (Germany), Madrid and Oviedo (Spain), Braga, Guimaraes, Lisbon and Aveiro (Portugal), Annecy and Saint Etienne (France), Turin, Alessandria, Udine, Padova, Piza, Bologna, Naples, Palermo and Forli (Italy), Stockholm (Sweden), Ostrava, Plzen (Czech Republic), Bratislava, Trnava, Kosice and Zilina (Slovakia), Cluj–Napoca (Romania), Budapest, Miskolc (Hungary), Ruse, Sofia, Gabrovo (Bulgaria), Rijeka (Croatia), Lubljana, Maribor (Slovenia), Lvov and Khmelnytsky (Ukraine), Vilnius (Lithuania), Athens and Patras (Greece), Denizli (Turkey), Singapore (Singapore), Kuala Lumpur (Malaysia), Hong Kong, Qingdao, Xi'an, Beijing, and Shanghai (China), Seoul and Daejeon (South Korea), Taipei (Taiwan), Tel Aviv (Israel), Toronto, Vancouver, and Windsor (Canada), Campinas, Sao Paulo, Brasil, Recife, Ouro Preto, Caxias do Sul, Natale and Ribeirão Preto (Brazil), Cairo (Egypt), Melbourne and Brisbane (Australia), Auckland (New Zealand), Las Vegas, Seattle, San Francisco (USA). He was a coordinator of 12 completed CEEPUS (16 universities) international co-operation projects and of the completed TEMPUS (6 universities)

project, and also a participant of 3 completed COPERNICUS (each of 25-30 universities) programme. Yearly, for a dozen or so years, 20-40 of his associates, PhD students, and students would go, within the European TEMPUS, CEEPUS, SOCRATES and ERASMUS co-operation programs frameworks, for the even several months long stages abroad, or for short 1-2 weeks long visits. All the above mentioned forms of his international activity are of big importance for development of the Polish scientific society with other countries. Moreover, he is the European Union expert within the framework of the Programme pertaining to Coal and Steel.

## 5.8. Family status

Prof. Leszek Adam Dobrzański, has been married for 43 years. His wife Teresa is a master of science and sanitary engineer. They have three children. The daughter Marzena Kraszewska is a master of English philology, the daughter Anna Dobrzańska-Danikiewicz is a Professor in the discipline „Materials engineering”, and their son Lech Dobrzański is a master of science and electronic engineer. They have also five granddaughters: Magdalena Kraszewska, and Ewa, Zofia and Helena Danikiewicz, and Hanna Dobrzańska.