**SERGII E. DZENIS**

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**Objective**

 ***Motor Designer***

full-time work, remote work

**Summary**

I have more than 20 years experience in design and simulation motors, and engineering management. During my work in electrical engineering, I have been developing a variety of applications of electrical machines for domestic, industrial, oil, gas, coal mines and aero and navy.I have been designing rotating electrical machines(IM,DC, SRM,RRM) operating at 36 V - 11 000 V with power from 0,05kW up to 3500 kW, high speed motors(up to 60.000rpm) , hermetical, submersible, explosion-proof motors, energy efficiency motors(IE4), generators for renewable energy. Also centrifugal pumps for oil, dirty and aggressive water. Experience in the development of centrifugal pumps and fans provides an in-depth understanding of the overall system and the corresponding drive design. I have been managing ukraninan and international engineering projects, projects in the field of oil, gas, coal mines. Direct management and implementation of projects with a funding volume from 2 million USD to 10 million USD.

**Education**

 **-Masters of Science in Electrical Engineering(Electrical engineer), Sevastopol National Technical University,2000**

**-PhD student at National Technical University«Kharkiv Polytechnic Institute»,at present <https://www.kpi.kharkov.ua/eng/>**

*Power engineering, electrical engineering and electromechanics, Electric machines department*

 **Courses:**

* 2022 Modeling of electrical machines and electromagnetic field by ANSYS Maxwell 2D/3D
* 2018 FEMM scripting course, FEA simulations of 2D electromagnetic field, NTU KhPI
* 2013 Training course on the requirements of IRIS business management standards for suppliers of products for the railway industry, Bureau Veritas
* 2013 Course on the internal audit of QMS ISO 9001: 2008 ISO 19011: 2011, Bureau Veritas
* 2009 Advanced training courses for chief designers ,The Bauman Moscow State Technical University
* 2009 Training course Software for automated project management and design Windchill PDMLink, Windchill ProjectLink; Software CAD Pro-E, CAE MathCad
* 2005 Training courses on production management based on the standards of MRP II
* 2004 Course on methods for resolving non-standard issues in the design of submersible pumps, Sumy State University

**Experience**

 **RnD Innovation group manger, Jul. 2022 — present**

**Current company**  Turkey

Development of motors for special applications - motors for nuclear power plants, for railway transport, with energy efficiency level IE4, motors according to NEMA standards. Designed medium and high voltage motors with voltages of 3000, 4000, 6000, 11 000 volts with IC411, IC611, IC616, cooling type.

*The range of IE4 motors has designed with reduction self-cost of the motors. The reduction of the cost are from -2 up to -9 %, what gives a possibility to tame a competitors at the market. Developed prototypes of asynchronous motor with squirrel cage aluminium rotor with energy efficiency level IE5.Several MV motor projects were implemented.*

**CEO and founder(Oct. 2018 — Feb. 2022)**

**LLC Design, Service, Engineering** (http://dsemotors.com/, <https://www.ua-region.com.ua/ru/42507746>) Kharkov, Ukraine

*Family-owned company - developer and manufacturer of energy-efficient electric motors and generators, submersible motors, variable frequency induction motors, submersible borehole water-filled induction motors, smart electric motors.*

*The products are manufactured both serially and according to individual projects, taking into account all conditions and wishes of the customer. Services of service maintenance of manufactured products.*

Established a new company, developed business strategy (production of electric motors and pumps according to individual customer requirements). Development,production, repair of electrical machines with individual projects - taking into account all the requirements of customers and with maximum adaptation to actual operating conditions - general industrial frequency-controlled electric motors, submersible (low-voltage and medium-voltage) motors and submersible centrifugal pumps.

Planning of current activities, budgeting, planning of production and sales strategy. Control of bookkeeping, payment of taxes and fees. Control over timely fulfillment of contractual obligations. Negotiations with key customers.

  *Developed several sizes of electric motors with few competitors in the market and high profitability, put them into production. We received approval of the state agency for energy efficiency(IE3,IE4) for our products. We became one of the suppliers of large state enterprises and corporations (Energoatom, water utilities). We have established repair work on electric machines with power from 100 kW. We were consulting in the field of electric machine building.*

**Director of engineering R&D Center of AC and DC motors(Mar 2015 – Oct. 2018)**

 **JSC ELECTROMASHINA.** <https://electromashina.com.ua/>(Kharkov, Ukraine)

*JSC Electromashina is machine-building enterprise in Ukraine with more than 140 years of history. The main products of the enterprise for over 50 years are DC electric machines, crane and metallurgical electric motors, electric motors for railway transport, explosion-proof electric motors for mines, traction motors and starters, generators for contact and battery electric locomotives,and other mine equipment.*

Made and carried out short & long term plans about the technical staff’s ability, test equipment establishment and research direction during the service period. Collected the advanced technology by benchmarking advanced companies and determine the future development direction of electrical machine technology. Designed the mechanical structure, electromagnetic design, the material selection, the test of performance rating, the test of reliability and the test of durability. The manufactured technique development includes the process of machining, heat-treating, casting, surface treatment, electrical insulation, winding & embedding, and assembly. Solved the technical issues in the process of electrical machine design, trial-producing, manufacturing and testing. Participate in the improvement research of the electrical machines performance index and identify the technology development tendency. Synchronous Reactive Motors (SynRM) were developed. An electric fan system for blowing start-braking resistors was developed.  *New types of products (asynchronous motors for railway vehicles) were developed, and a new direction of the company's activity was founded. Increase in output volume by 35% - due to new products, with minimal costs for the development of these products*.

####   **Chief Designer of engineering Center of AC and DC motors**(Sep 2013 – Feb 2015)

**JSC ELECTROMASHINA.** <https://electromashina.com.ua/>(Kharkov, Ukraine)

Participated in the creation of the team building for the electrical machine project. This involved designing concepts, layouts, analysis and simulation, prototype design release, prototype procurement, and build and test. Generated new product concepts using various ideation techniques. Developed prototypes for evaluation of new motor and pump concepts. Developed concepts, designs, product specifications, and other documentation. Developed plans to scale up hardware and software R&D capability. Also, partook in the development of electrical traction motors for coal mines electric rail locomotives. Developed modern traction and auxiliary induction motors with high efficiency and high working reliability in harsh operating conditions.

**Director Design Engineering, Project Director, Jan 2010 – Sep 2013.**

**Special Design Bureau for Electrical Engineering Ukrelectromash (UPEC corp.)**

<https://upec.ua/manufacture/kharkovskiy-elektrotekhnicheskiy-zavod-ukrelektromash-khelz/>(Kharkov, Ukraine)

*UPEC Industrial Group is one of the largest private companies in Ukraine specializing in machine-building business. Consumers of the company's products are practically all conveyor enterprises of the CIS. UPEC includes HELZ, SKB UKRELEKTROMASH and other enterprises. The consolidated volume of gross sales of the industrial group “UPEC” (Kharkov) at the end of 2011 amounted to 275 million US dollars.*

Development and support of the production of general industrial specialized asynchronous electric motors and aggregates based on electric motors. Designed of high-speed (4500, 24 000 rpm) electric motors, the development of generators on permanent magnets. Development of generators for renewable energy. Implementation of  R&D, development, and implementation of calculation methods for electromagnetic and thermal calculations, development of standards, and patenting of products. Realized International engineering projects with enterprises of Italy and China. Designed a range of motors based on motor kits (produced in China and Italy) for the Ukrainian market to to withstand competition with Chinese and Italian manufacturers.   Designed motors with low self-cost and good technical characteristics.The part of the small induction motors was designed and developed in 2014year.  These are the first Ukrainian energy-efficient motors at IE3 and IE4 levels.

<https://www.sq.com.ua/rus/news/nauka_i_tehnologii/26.01.2012/v_harkove_razrabotali_supereffektivnyj_dvigatel>

Designed elevation motors which are two-speed low-noise motors with squirrel cage rotors. These designed for passenger and freight elevators of residential, administrative and industrial buildings.

 In collaboration with scientists National Technical University«Kharkiv Polytechnic Institute» developed and successfully tested  rolling-rotor electrical motor. <https://www.sq.com.ua/rus/news/nauka_i_tehnologii/16.10.2013/v_hpi_razrabotali_uluchshennyj_elektrodvigatel/%D0%A3%D0%BA%D1%80%D1%8D%D0%BB%D0%B5%D0%BA%D1%82%D1%80%D0%BE%D0%BC%D0%B0%D1%88>

**Deputy director of Development, Chief Designer,Feb 2008 – Jan 2010**

**HELZ Company (Ukrelectromash, UPEC corp.)** (Kharkov, Ukraine)

The design department was established  "from scratch"  at the plant and related services (the testing of prototypes unit, the documentation archive, the bureau of scientific and technical information, and the unit of the experimental manufacturing of prototypes).   A new type of prospective  SRM  motors for domestic and industrial applications was created.  Development of design and implementation of a number of new products, and expansion of the line of electric motors, pumps, and fans. Due to modernization serial motors achieved economy on self-cost from 2 up to 7% without compromising its technical performance.

<https://www.sq.com.ua/rus/news/no_rubric/06.10.2008/harkovskij_zavod_ukrelektromash_v_sentyabre_uvelichil_obem_proizvodstva_elektrodvigatelej_air71/%D0%A5%D0%AD%D0%9B%D0%97>

**Technical Director,** **Plant MOLOT,** **Jan 2004 – Aug 2007**

Imported electric pumps manufactured by KSB, Ritz, Pleuger have been successfully replaced in projects and operation. Saving up to 50% of the Customer's funds and more than doubling the sales volume and profitability at the manufacturing plant.

**Project Manager,** **Plant MOLOT,** **Jun 2003 – Jan 2004**

Implementation of the first submersible pumps and electric motors for oil, coal mines in Ukraine. Documentation of design information, drawings, test data and maintenance of reports for each project. Direct management and realization of projects with financing volume from 2 million USD to 5 million USD.

**ACTIVITIES.**

- Chairman of the examination Committee of the Department of Electrical machines and apparatus of The National Technical University «Kharkiv Polytechnic Institute»
- Member of national technical Committee of Ukraine (heavy products of electrical engineering) for standardization of electric motors

**APPLICATIONS.** MSOffice, MSProject, Trello , Jira, Windchill PDMLink, Windchill ProjectLink;

**COMPUTER-AIDED DESIGN.** AutoCAD, Pro-Engineer, SolidWorks, Ascon Kompas

**FINITE ELEMENT ANALYSIS.** FEMM, ANSYS Maxwell(2D, 3D)

**CAE** programs in MathCad, SPRUT AED-EM, MotoCad, ANSYS RMxprt

**CORE COMPETENCIES.**

* Project management
* CAE includes the analysis of forces, rotor modal and the electrical machine’s noise & vibration, stress analysis.
* Optimization (of motor design, stator winding, geometry of rotor and stator sheets) of electrical machines.
* Excellent interpersonal, presentation and negotiation skills.
* Skills in prototype testing methods as well as designing and testing prototypes of motors.
* Knowledge and understanding applications for pumps, fans, lift winches, hoists, electric track motors
* Knowledge’s motor standards and technical publication GB, IEC , NEMA, GOST
* Knowledge on material lamination steels, permanent magnets, aluminum and copper alloys, wires, grease by produced China, EU, CIS manufacturing.
* Knowledge manufacturing processes and technologies of large-scale and individual types production of motors

**LANGUAGES.**

* Russian, Ukrainian – native, English – B2 , Turkish - A2