

## **KRASOVSKY VASILIIY LEONIDOVICH**

### **Personal data**

Birth date and birth place: 4/11/1945, Yenakiyev, Donetsk area, Ukraine.

### **Education, scientific degrees and ranks**

- 2002 Professor of the Department of Structural Mechanics and Strength of Materials, Prydniprov's'ka State Academy of Civil Engineering and Architecture (PSACEA)
- 2001 Doctor of technical science on specialty of Building mechanics.
- 1980 Senior lecturer of faculty of resistance of materials, Dnepropetrovsk engineering-building institute (from 1994 - PSACEA).
- 1974 Candidate of technical science on specialty Resistance of materials and the building mechanics, the Dnepropetrovsk state university (DSU).
- 1970 Engineer-mechanic on specialty Manufacture of flying devices, DSU.
- 1963 Technician-mechanic on specialty Manufacture of flying devices, Dnepropetrovsk mechanical technical school.

### **Career**

- From 2003 Managing faculty of the Department of Structural Mechanics and Strength of Materials (DSMSM), PSACEA
- 2002-2003 Acting managing faculty of the Department of Structural Mechanics and Strength of Materials (DSMSM), PSACEA
- 2001-2002 Professor of the Department of Structural Mechanics and Strength of Materials(DSMSM), PSACEA.
- 2000-2001 Senior lecturer of the Department of Structural Mechanics and Strength of Materials(DSMSM), PSACEA.
- 1998-2000 Senior lecturer of the Department of resistance of materials (DRSM) PSACEA.
- 1995-1997 Doctorate of the Department of resistance of materials (DRSM), PSACEA.
- 1976-1994 Senior lecturer of the Department of resistance of materials (DRSM), PSACEA.
- 1974-1976 The Senior scientific employee of the Problem research laboratory of durability and reliability of designs (DSU).
- 1971-1973 The Post-graduate student of faculty of the applied theory of elasticity, DSU.
- 1970-1970 Engineer of the Problem research laboratory of durability and reliability of designs (DSU).
- 1963-1964 Senior technician of Design Bureau Southern (Dnepropetrovsk).

## Scientific interests

1. **Mechanics:** problems of building mechanics of thin-walled designs (deformation, stability and fluctuations of plates and shells).
2. **Biomechanics:** experimental and theoretical researches of firm and soft fabrics, a problem of medical biomechanics of the locomotor system, connected with an osteosynthesis and endoprosthesis joints.

## Publications and conferences

About 200 printed works, including three monographies, more than 120 articles in scientific domestic and international magazines and thematic collections, including editions of academies of sciences of the USSR and Ukraine, more than 60 theses in collections of works of national and international symposiums, conferences, congresses, more than 60 reports at these forums and various seminars. Besides alongside with external publications: articles, theses of reports, published, basically for internal use at PSACEA, more than 20 methodical manuals and instructions for performance of settlement-designing and laboratory works at rates of resistance of materials and the theory of elasticity.

From all volume of the published works, 60 publications are devoted to researches of problems of biomechanics. Practically half from them is published in specialized central medical editions of Ukraine and other countries, in particular, 20 articles are published in magazine AMS of Ukraine «Orthopedy, traumatology and prosthetics».

## The basic achievements

1. **Mechanics:** independently and together with colleagues in physical and numerical experimental researches carrying ability of cylindrical and conic shells with the expressed heterogeneity of subcritical intense-deformed condition, and also under various conditions of the appendix of loading has shown high efficiency of application of modern program complexes at research of problems of the specified class. The phenomenon of "a static resonance" has found out in physical experiment and has confirmed in numerical researches
2. **Biomechanics:** together with the candidate of medical sciences, the senior lecturer (the end of 80th years of the last century) A.E.Loskutov experimentally has theoretically proved also an opportunity and necessity of use as a basic surface of endoprosthesis of large joints of the bottom finitenesses (talocrural, knee) spongy bone fabric. It has allowed to develop and introduce in practice of public health services first-ever endoprosthesis of talocrural joint which design has been based on a new principle of fixing in a bone.

## Lecture course in IIIACA

1. Resistance of materials.
2. Building mechanics.
3. Theory of elasticity and elements of the theory of plasticity.
4. Theory of constructions (for architects and designers).

5. Medical biomechanics of locomotorium for doctors and interns at an educational seminar of " the Biomechanic of locomotorium system ».

### **Pupils**

3. **Mechanics:** prepared 12 Cand.Tech.Sci. on a specialty «Building mechanics».
4. **Biomechanics:** rendered the advisory help at performance of experimental and theoretical researches on the biomechanics by preparation of 10 candidate and three theses for a doctor's degree on medical sciences, specialty of «Traumatology and orthopedy».

### **Grants, honorary titles, awards**

- 2015 Commemorative medal «For merits before city Dnepropetrovsk» (in the field of science and education).
- 2015 Commemorative medal «For merits» before PSACEA.
- 2012 Anniversary medal «100 years M.K.Yangel ».
- 2012 Commemorative medal «For merits before city Dnepropetrovsk » (in the field of medicine: traumatology and orthopedy).
- 2011 Honorary member of an academic council of the Dnepropetrovsk state medical academy.
- 2007-13 Grant of A.Humboldt foundation for interinstitute scientific cooperation IAM RWTH and PSACEA (the head of two sections of the project from the Ukrainian side).
- 2007 Honourable professor of Building faculty of Warsaw technical university.
- 2005 Sign on the Ministry of Education and science of Ukraine « honours pupil of Ukraine».
- 2004 The Full member of Academy of construction of Ukraine.
- 1998 Senior lecturer (biomechanics), the grant International of Soros programs of support of education in the field of the exact sciences (ISSEP) APU072050.
- 1996 Senior lecturer (mechanics of plates and environments), the grant International of Soros programs of support of education in the field of the exact sciences (ISSEP) APU052059.
- 1994-1997 The Grant of the Government of Ukraine and the International scientific Fund (Soros) K4H100 for performance of the project theoretical and experimental researches of deformation, fluctuations and stability of the smooth and supported shells,

### **The contact address**

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## List of selected works in English

1. Krasovsky V.L., 2015, "Deformation and buckling of axially compressed cylindrical shells with essentially non-uniform stress-strain state", *XIV Sympozjum Stateczności Konstrukcji. Zakopane*. pp. 17-18.
2. Lykhachova O., Krasovsky V., 2014, "Numerical simulation of buckling tests of axially compressed cylindrical shells with one circular cutout (R. Tennyson's experiments)", *Theoretical foundations of civil engineering. – Warsaw: WP. №22*. pp. 133-136.
3. Krasovsky V.L., M.V. Kolesnikov M., 2013, " "Static resonance" in cylindrical shells with periodical in hoop direction strain-stress state", *Dynamical Systems Theory: eds. J. Awrejcewicz, M. Kazmierczak, P. Olejnic, J. Mrozowski*. Lodz. Vol.1. pp. 13-24.
4. Krasovsky V.L., Kolesnikov M.V., 2013, " "Static resonance" in cylindrical shells with periodical non-uniform strain-stress state conditioned by load or initial imperfections", *In monograph "Static, Dynamics and Stability of Structures"*. Poland, Lodz. – 2013. – Vol.3 – "Review and Current Trends in Stability of Structures". 11. pp. 289-312.
5. Krasovsky V.L., Kolesnikov M.V., Schmidt R., 2012, "The "static resonance" effect in problems of axial compression of the cylindrical shells with initial geometrical imperfections", *Proceedings of the XIII-th Symposium of Stability of Structures*. Poland, Zakopane. pp. 383-388.
6. Krasovsky V.L., 2012, "Experimental investigation of buckling of compressed cylindrical shells (quality of shells and mechanisms of buckling)". *In monograph "Static, Dynamics and Stability of Structures"*. Poland, Lodz. Vol.2. 18. pp.447-476.
7. Krasovsky V., Marchenko V., Schmidt R., 2012, "Influence of manner of applying axial compression on the behavior of a cylindrical shell under local action", *Proceedings of the XIII-th Symposium of Stability of Structures*. Poland, Zakopane. pp. 389-396.
8. Krasovsky V., Marchenko V. and Schmidt R., 2011, "Deforming and buckling of axially compressed cylindrical shells with local loaded in numerical simulation and experiments", *Thin-Walled Structures*, 49. pp. 576-580.
9. Krasovsky V.L. and Nagorny D.V., 2010, "Starting mechanisms of buckling of real longitudinally compressed cylindrical shells depending on their quality", *Advanced problems in mechanics of heterogeneous media and thin-walled structures, Dnipropetrovsk*. pp. 163-195.
10. Krasovsky V.L., Marchenko V.A., Kolesnikov M.V., 2009, "Deformation and buckling of axially compressed cylindrical shells under local impacts in numerical simulation and experiments", *Stability of structures. XII<sup>th</sup> Polish symposium*. pp. 231-238.
11. Krasovsky V.L. and Kostyrko V.V., 2007, "Experimental studying of buckling of stringer cylindrical shells under axial compression", *Thin-Walled Structures*, No. 45, pp. 877-882.
12. Krasovsky V.L., Kostyrko V.V., 2006, "Influence of structural factors on the stability of stringer shells under axial compression", *Stability of structures. XI<sup>th</sup> Polish symposium*. pp.203-210.
13. Gavrilenko G.D. and Krasovskii V.L., 2004, "Calculation of Load-Carrying Capacity of Elastic Shells with Periodic Dents (Theory and Experiment)", *Problemy Prochnosti*, No.5, pp. 87-97 (English translation: *Strength of Materials*, 2004, Vol. 36, No. 5, pp. 511-517).
14. Gavrilenko G.D. and Krasovskii V.L., 2004, "Stability of Circular Cylindrical Shells with a Single Local Dent", *Problemy Prochnosti*, No.3, pp. 52-64 (English translation: *Strength of Materials*, 2004, Vol. 36, No. 3, pp. 260-268).
15. Krasovsky V.L. and Varyanychko M.A., 2004, "Effect of a "Static" resonance in elastic thin-walled cylinders", *21<sup>st</sup> Intern. Congress of Theoretical and Applied Mechanics. Abstracts Book and CD-ROM Proceedings*, Warsaw: IPPT PAN, pp. 337.
16. Krasovsky V.L., Varianichko M.A., Nagorny D.V., 2003, " „Static resonance" phenomena of thin-walled cylindrical shells", *Proceedings of the IX-th Symposium of Stability of Structures, Poland, Zakopane*, pp. 227-234.
17. Krasovsky V. L., Morozov G.V., 2001, "Clozed cylindrical shell under longitudinal self-balanced loading", *Proceedings of the Third International Conference on thin-walled structures. Elsevier*, pp. 677-682.
18. Krasovsky V.L. and Kostirko V.V., 2000, "The investigation of effect of axial compressive

load eccentricity on the stability of stringer shells”, *Proceedings of the VIII-th Symposium of Stability of Structures, Poland, Zakopane*, pp. 137-142.

19. Loskutov A.E., Krasovsky V.L., Oleynik A.E., 1999, “The stiffness characteristics of a healthy or damaged by aseptic necrosis femoral head”, *Journal of theoretical and applied mechanics. Biomechanics: selected topics. Polish society of theoretical and applied mechanics. - Warsaw. No.3. -Vol.37*, pp. 625-638.

20. Krasovsky V.L., Morozov G.V., 1998, “Stresses in a wall of steel vertical cylindrical tanks under foundation subsidence”, *Lightweight structures in civil engineering. -Warsaw: Wydawnictwo Naukowe*”, pp. 131-136.

21. Krasovsky V.L., Loskutov A.E., Nikiforov I.A., 1997, “A method for evaluation of nonhomogeneity of strength and rigidity properties of bones joint ends tissue”, *Book of Abstracts of 3-rd EUROMECH Solid Mechanics Conf. - Sweden. -Stockholm*, pp.18, II-B4.

22. Krasovsky V.L., 1997, “On buckling mechanism of real thin-walled cylinders at axial compression”, *Proceedings of the VIII-th Symposium of Stability of Structures. -Poland, Zakopane*, pp.145-150.

23. Evkin A.Yu., Krasovsky V.L., 1996, “Theoretical and experimental investigation of local postbuckling equilibrium configurations of cylindrical shells”, *19-th International Congress of Theoretical and Applied Mechanics. Abstracts. -Japan, Kyoto*, pp. 645.

24. Evkin A.Yu., Krasovsky V.L., 1996, “An investigation of local postbuckling equilibrium configurations of thin cylindrical shells”, *Proceedings of the 26th Israel Conference on Mechanical Engineering. -Technion City, Haifa, Israel*, pp. 507-509.

25. Krasovsky V.L., Kostirko V.V., 1995, “Prebuckling deforming of shells stiffened with stringers at axial compression”, *Proceedings 15-th Canadian Congress of Applied Mechanics. - Canada, Victoria, British Columbia. V.1*, pp. 288-289.

26. Evkin A.Yu., Krasovsky V.L., 1994, “On one approach to determination of the admissible load for thin shells”, *Proceedings of the VII Sympozjum statecznosci konstrukcji. Bielsko-Bial*, pp.15-20.

27. Krasovsky V.L., 1994, “Nonlinear effects in the behavior of cylindrical shells under nonuniform axial compression. Experimental results”, *Proceedings of the 25th Israel Conference on Mechanical Engineering. Technion City, Haifa, Israel*, pp. 623-625.

28. Loskutov A.E., Krasovsky V.L., Golovaha M.L., 1993, “Ankle joint. Some properties of bone-tissue and joint endoprosthesis stability”, *Proceedings 14-th Canadian Congress of Applied Mechanics. -Kingston, Ontario*, pp.745-746.

29. Golovaha M.L., Krasovsky V.L., Loskutov A.E., 1992, “The biomechanical aspects of the ankle joint endoprosthesis”, *19-th Symposium of the ESOA. Joint destruction in arthritis and osteoarthritis. -Noordwijkerhout, the Netherlands: ESOA*. pp.47.

30. Krasovsky V.L., Loskutov A.E., 1992, “Some qualities of bone tissue of ankle joint. Biomechanical aspects of endoprosthesis”, *29-th Polish Solid Mechanics Conference. Abstracts. - Warsaw: IPPT PAN*. pp.76.

31. Krasovsky V.L., 1992, “The effect of the stress state nonhomogeneity on the behaviour of compressed cylindrical shells”, *5-th Polish Conference Shell Structures. Theory and Applications. - Warsaw*. pp. 69-70.

32. Krasovsky V.L., Manevich A.I., 1992, “An experimental testing of coupling buckling theory of stiffened cylindrical shells”, *18-th International Congress of Theoretical and Applied Mechanics. Abstracts. -Israel. -Haifa*. pp. 100.

33. Golovaha M.L., Krasovsky V.L., Loskutov A.E., 1992, “The biomechanical aspects of the ankle joint endoprosthesis” *19-th Symposium of the ESOA. Joint destruction in arthritis and osteoarthritis. -Noordwijkerhout, the Netherlands: ESOA*. pp. 47.

34. Krasovsky V.L., Manevich A.I., 1991, “An experimental examination of the coupling buckling theory of stiffened shells” *VI Sympozjum statecznosci konstrukcji, Polska*. pp. 55-58.

35. Evkin A.Yu and Krasovsky V. L., 1991, “Post-critical deformation and estimation of the stability of real cylindrical shells under external pressure”, *Prikladnaya Mekhanika*, Vol. 27, No. 3,

pp. 76-83 (English translation: *Soviet applied mechanics*, 1991, Vol. 27, No. 3, pp. 290-296).

36. Krasovskii V.L., 1990, "Effect of the loading scheme on the stability of thin-walled cylinder subjected to nonuniform lengthwise compression", *Prikladnaya Mekhanika*, Vol. 26, No. 1, pp. 38-43 (English translation: *Soviet applied mechanics*, 1990, Vol. 26, No. 1, pp. 32-36).

37. Gusev V.V., Kostirko V.V., Krasovskii V.L. and Latukha V.I., 1990, "Stability of cylindrical shells reinforced by ribs of variable stiffness", *Prikladnaya Mekhanika*, Vol. 24, No. 10, pp. 57-62 (English translation: *Soviet applied mechanics*, 1990, Vol. 24, No. 10, pp. 985-989).

38. Evkin A.Yu., Krasovsky V.L., 1990, "A new model for calculation of critical pressure of cylindrical shells with initial imperfections", *28-th Polish Solid Mechanics Conference*. pp.65-68.

39. Evkin A.Yu., Krasovsky V. L., and Manevich L. I., 1978, "Stability of longitudinally compressed cylindrical shells under quasi-static local disturbances", *Izv. Akad. Nauk. SSR. Ser. Mekhanika Tverdogo Tela*, Vol. 13, No. 6, pp. 95-100 (English translation: *Bull. of Acad. of Science of the USSR Mechanics of Solids*, 1978, Vol. 13, No. 6, pp. 83-88).

40. Krasovskii V.L. and Linnik A.K., 1978, "Technological characteristics and bearing capacity of waffle cylindrical shells", *Problemy Prochnosti*, No.1, pp. 13-16 (English translation: *Strength of Materials*, 1978, Vol. 10, No. 1, pp. 11-14).

41. Mossakovskii V.I., Konokh V.I. and Krasovskii V.L., 1974, "Stability of longitudinally compressed cylindrical shells of nearly circular cross section", *Prikladnaya Mekhanika*, Vol. 10, No. 3, pp. 3-8 (English translation: *Soviet applied mechanics*, 1974, Vol. 10, No. 3, pp. 231-235).