

Curriculum Vitae S. V. Lomov

Full name: Stepan Vladimirovich Lomov
 Степан Владимирович ЛОМОВ
 Date of birth: 29 January 1955
 Place of birth: Leningrad (St.-Petersburg)

Nationality: Belgian
 Sex: male
 Civil state: married

1 QUALIFICATIONS

- School: 30th Physics & Mathematics School, Leningrad - 1972
- University: Leningrad Polytechnic Institute (St.-Petersburg State Polytechnical University), Physics & Mechanics Faculty, Chair of Applied Mathematics; Diploma: Dipl. Engineer-Mathematist (magna cum laude), 1978
- PhD research at All Union Research Institute of Transportation Machinery, St.-Petersburg Candidate of Technical Science (corresponds to PhD), 1985. Subject: Research into mathematical modelling and practical construction of ballistic and shock protective structures
- 1995: Doctor of Technical Science (Doctor Habille) in Textile Materials Science Thesis: "Mathematical Prediction of the Structure and Mechanical Properties of Woven Fabrics for Technical Usage"

2 RESEARCH CAREER

1978-1989 Researcher, then Senior Researcher at the All-Union Research Institute of Transportation Machinery, St.-Petersburg subject: research on the mathematical modelling and construction of ballistic protective structures.

1989-1999 Senior Researcher, then Professor of the St.-Petersburg State University of Technology and Design, Chair of the Mechanical Technology of Fibrous Materials (Head: Prof. N.N.Truevtzev)

Research projects:

- modelling of structure and properties of woven fabrics
- experimental studies of structure and mechanical behavior of yarns and fabrics
- modelling of textile ballistic protection
- quality control in yarn production
- design and technology of folk art fabrics

Courses (5-year engineers and Master curriculum): Mechanical technology of Fibrous Materials; Mathematical Modelling; Applied Mechanics of Textiles

Supervising of PhD (Eugene Belov, Olga Venderevskaya) and Master students

1994-1998 (three-four months a year)

Research activities in De Montfort University, Leicester, UK (visiting scientist) on yarn fibrous structure and protective textile structures (School of Design and Manufacture, Head - Dr. R.Harwood)

Supervising of PhD: Eugene Belov

1999-up to present: Research Fellow and Part-time Professor of K.U.Leuven, Department MTM, Composite Materials Group (Prof. I.Verpoest). From 2002 – member of Independent Academic Staff (*Zelfstandig Akademisch Personeel*)

Research career in K.U.Leuven:

- 1999 – 2001: Senior post-doc grantee of the Research Council of K.U.Leuven (two grant terms).
- 2001 – present: Research Fellow
- 2002 – present: Part-time professor

Research interests

- Structural mechanics of textiles, composites and biomaterials
- Multi-level modelling of heterogeneous media
- Internal geometry, mechanical properties, permeability of textiles and composites
- Development of "virtual material" software
- Experimental studies of properties of textiles and composites
- Advanced reinforcements (textile, 3D, nano...)

3 ACADEMIC

Regular courses in K.U.Leuven:

- H0Z78A Composite Processing: Textile Preforms for Composites (2001/2002 – 2006/2008)
- H0K56A General Methodology of Modelling (2001/2002 – 2006/2008)
- H165 Capita Selecta: Mechanics of Textile Reinforcements (2000/2001 till 2006/2007)

- [H9X40A](#) Polymer Composites II (2007/2008 – ...)
- [H02X3A](#) Polymer Composites II - Fundamental Mechanics of Heterogeneous Materials (2007/2008 – ...)
- H02Y4A Textile Preforms for Composites (2007/2008 – ...);
- [H00E4A](#) Properties of Composites A&B (2008/2009 – ...)

Doctoral courses in K.U.Leuven and in other universities

- 1999/2000, Structural Mechanics of Textiles, K.U.Leuven
- March 2001 Mechanics of textile reinforcements, IFP, Gothenburg, Sweden
- May 2001: Doctoral lecture course in the Department of Structural Engineering, Politecnico di Milano: Structural Mechanics of Textiles.
- May 2004: Doctoral course in Tech. University Liberec, Czech Republic: Structural Mechanics of Textiles.
- May 2008 Mechanics of heterogeneous media, Politecnico di Milano
- November 2009 Mechanics of heterogeneous media, ATHENS, K.U.Leuven
- May 2010 Textile composites, St-Petersburg State University of Technology and Design

Supervising PhD and Master studies

Promotor of PhD, K.U.Leuven, since 2002: A. Prodromou, T. Truong Chi, F. Desplentere, S. Kondratiev, D. Ivanov, A. Willems, M. Moesen, G. Kerckhofs, J. Xu, K. Vanclooster, B. Verleye, G. Perie, K. Vallons, O. Shishkina, V. Romanov, M. Aravand

Promotor of post-docs at K.U. Leuven (grants K.U. Leuven, FWO): T. Tsujikami (2003), L. Gorbatikh (2005,2006), A. Warriier (2008-2009)

Supervisor of Marie Curie PhD Fellows (2001-2004, 12 students from 10 European universities, 2007-2009, 2 full-time PhD students)

Supervisor visiting PhD and Master students in K.U.Leuven: Uni Parma (Italy), Uni Isfahan (Iran), St-Petersburg State Polytechnical University and Perm Technical University(Russia), University Zaragoza (Spain), Osaka University (Japan), Technical University of Lodz (Poland), University of New Mexico (USA)

4 RESEARCH PROJECTS

Finished research project at K.U. Leuven (promotor or co-promotor, principal investigator):

European projects

1. "Technologies for Carbon fibre reinforced modular automotive structures (TECABS)" (2000-2003)
2. GROWTH-Marie Curie Training Network on "Composites Properties and Processing" HPMT-CT-2000-00030 (2000-2004),
3. GROWTH-Network on "Composites in Transport" (2001-2003)
4. IP "Nanotechnologies and nano-sciences, knowledge-based multifunctional materials, and new production processes and devices" (AVALON), 2006 – 2009
5. STREP "Integrated Tool for Simulation of Textile Composites (ITool)", 2004-2007, partners: EADS, Dassault, Alenia Aeronautica, DLR, ESI Group etc
6. Multidisciplinary Research and Training on Composite Materials Applications in Transport Modes (MOMENTUM), Marie Curie Training Network, 2006-2009
7. Automated tow placement technology (AUTOW), 2007-2009
8. EDA: : "New materials for individual protection", 2009-2010

IWT/FWO (Flanders Government) projects

1. "Advanced Numerical Techniques in R&D on Processing and Properties of Textiles and Textile Composites" (STWW/000148 2000-2002)
2. "Predictive tools for permeability, mechanical and electro-magnetic properties of fibrous assemblies: Modelling, simulations and experimental verification" (GBOU/020209 2003-2006)
3. Study of formability of self-reinforced polypropylene, 2004-2006
4. Thermoforming of thermoplastic composite products based on two-dimensional textiles: experimental research and simulation (2004-2007)
5. OPTIMESS research network (2005-2008)
6. FWO Forming of thermoplastic sandwich constructions: experimental research & numerical simulation, 2007-2010
7. IWT Design of composite aeronautic parts, 2007-2008

K.U.Leuven projects

1. GOA/98/05: "Development of unified models for the mechanical behaviour of textile composites" (1998-2002)

2. OT/02/58: "Concurrent multi-scale design/engineering of textile composites" (2002-2004)
3. OT/04/26: "Mesomechanical modelling of bone, scaffolds and implants" (2004-2008)
4. GOA/10/004: "New model-based concepts for nano-engineered polymer composites" (2009-2014)

Projects directly funded by industry and foreign research funds:

1. Dow Automotive: Predictive models for short fibre reinforced polypropylene, 2003-2004
2. EADS Germany: Damage modelling in textile composites, 2004-2007
3. ONERA, France: Study of internal structure of carbon reinforcements, 2003
4. Snecma Group, France: Modelling of textile composites, 2003; 2006-2009
5. Toyota, Japan: Performance of carbon-fibre composite car body structures, 2006-2009

Other

1. Research Promotion Foundation, Cyprus: Analysis and Design of Polymer Nanocomposites, 2007-2009

Promotor of Visiting Fellowship grants of K.U.Leuven and FWO

T. Tsujikami (2003), L. Gorbatikh (2005, 2006)

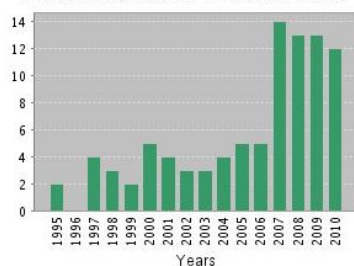
Nano-reinforced composite materials (post-doc grant A. Warrier) (2007-2009)

Current research grants (promotor or co-promotor)

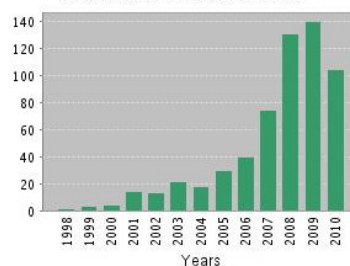
<i>Funding source</i>	<i>Title</i>	<i>Years</i>
EC – FP7	Nano-reinforced foams (NANOCORE)	2008-2010
	Simulation based solutions for industrial manufacture of large infusion composite parts (INFUCOMP)	2009-2012
	HIVOCOMP (high volume composites for automotive)	2010-2014
	IMS&CPS (nano-engineered fibre reinforced composites)	2010-2014
	M-RECT (PEEK + carbon nanotubes)	2010-2014
IWT/FWO (Flanders Government)	Micro-meso-macro homogenization of the fatigue degradation of textile reinforced composites	2006-2011
	Experimental and theoretical methods for new generation of metal fibres for automotive glass production	2010-2011
	NanoForce: a cluster of three projects on: <ol style="list-style-type: none"> 1. Steel fibre reinforced composites 2. Modelling of fatigue of nano-engineered fibre reinforced composites 3. Nanofibres 	2010-2014
	OPTIMESS-2 Research Network	2009-2012
	Stochastic effects in textile composites	2009-2013
K.U. Leuven	New model-based concepts for nano-engineering polymer composites (GOA)	2009-2014
Direct industry	Nanocyl, Belgium: Nano-reinforced carbon fibre reinforced composites	2007- ...
	3Tex, USA: 3D woven and braided composites	2009 - 2010

5 RESEARCH OUTPUT

Published Items in Each Year



Citations in Each Year



Results found: 92
 Sum of the Times Cited [?]: 602
[View Citing Articles](#)
[View without self-citations](#)
 Average Citations per Item [?]: 6.54
 h-index [?]: 14

A comment of the SCI entries: to reach all the publication of S.V. Lomov, the search should be done as follows:
 LOMOV SV or LOMOV S

as in some papers the second initial is omitted.

A comment on the publication history: even the research career of S.V. Lomov has started in 1978, the first publication in international journals has appeared in 1995 due to confidentiality of the work on terminal ballistics and than difficulties of publishing abroad from Russia.

Invited lectures in conferences, workshops, summer schools

1. 5th International Conference on Textile Composites, Leuven, Belgium, 18-20 September 2000
2. Structural Integrity of Composite Materials and Structures, A Residential Meeting and Workshop, Isle of Capri, Italy, 20-25 May, 2001
3. 5th ESAFORM Conference on Material Forming, Krakow, Poland, 14-17 April 2002
4. Summer Schools: Intelligent and smart textiles (ITSAPT), Liberec, Czech Republic, June 2004, June 2005
5. 16th International Conference on Composite Materials (ICCM-16), Kyoto, Japan, 8-13 July, 2007.
6. CompTest-2008 Conference, Dayton, USA, 20-22 October 2008

Organisation of international conferences

S.V. Lomov was a member of Organisation or Steering Committees of the following international conferences:

1. 5th International Conference on Textile Composites, Leuven, Belgium, 18-20 September 2000
2. High Performance Composites (HPSC-2002), Seville, Spain, March 2002
3. 6th International Conference on Textile Composites, Philadelphia, USA, 11-13 September 2002
4. CompTest-2003 Conference, Chalons-de-Champagne, France, January 2003
5. 7th International Conference on Textile Composites, Yonesawa, Japan, October 2004
6. CompTest-2006 Conference, Porto, Portugal, April 2006
7. 8th International Conference on Textile Composites, Nottingham, UK, 16-18 October 2006
8. 10th ESAFORM Conference on Material Forming, Zaragoza, Spain, April 2007
9. 3rd International Workshop on Optical Measurement Techniques, Leuven, Belgium, 28-30 May 2007
10. Finite Element Modelling of Textiles and Textile Composites, St.-Petersburg, Russia, 26-28 September 2007 (The Chairman of the Scientific Committee)
11. ECCOMAS thematic conference mechanical response of composites, Porto, Portugal, 12-14 September 2007
12. 9th Conference on Flow Processes in Composite Materials, Montreal, Canada, June 2008
13. CompTest-2008 Conference, Dayton, USA, 20-22 October 2008
14. 10th ESAFORM Conference on Material Forming, Zaragoza, Spain, April 2008
15. 9th International Conference on Textile Composites, Delaware, October 2008
16. 17th International Conference on Composite Materials (ICCM-17), Edinburg, UK, 2009
17. 11th ESAFORM Conference on Material Forming, Lyon, France, April 2009
18. 10th Conference on Flow Processes in Composite Materials, Ascona, Switzerland, July 2010

Participation in international benchmarking round-robin exercises

1. Formability of textile reinforcements for composites: <http://nwbenchmark.gtwebsolutions.com/index.php>
2. Permeability of textile reinforcements for composites:
<http://permeability.onera.fr/>><http://permeability.onera.fr/>

6 DEVELOPMENT OF SOFTWARE, COMMERCIALISED BY K.U. LEUVEN

1. *WiseTex* suite of software for modelling of textiles and textile composites: internal geometry, visualisation, mechanical properties, permeability, finite element modelling
2. *MeshTex* (together with Osaka University): finite element models of textile composites
3. *SYSPLY*: the modules for modelling textile composites micromechanics are included in the latest version of *SYSPLY* (ESI Group) software for designing, analysing and optimising composite structures.

The *WiseTex* and *MeshTex* software are used in universities (Lodz; Liberec; Bremen; Aachen; Orleans; Stuttgart, Osaka, The Notre Dame (USA), Hochschule Niederrhein, ENSAIT Roubaux, University of Patras, University of Sofia, Gheorge Asachi Technical University, Ecole Polytechnique Montreal, Kaunas Technical University, Technische Universität München, Nanyang University, Singapore, University of Ulster, Michigan State University), research institutes (IFP, Gotheborg; ONERA, Paris), EU projects consortia (ITOOL, MOMENTUM, AUTOW) and four industrial companies in Belgium, France and USA.

Bibliography S.V.Lomov

I. Books/Book chapters

- I.1. Truevtzev, N.N., Shtut, I.I., Kuznetsov, Yu.I., Primachenko, B.M., Lomov, S.V. Mechanical technology of textile materials. Reference book, St.Petersburg State University, 1993, 320 p. (in Russian)
- I.2. Lomov S.V., Shtut I.I. Modelling the spinning technological processes, St.-Petersburg State University of Technology and Design, 1995, 56 p. (in Russian)
- I.3. Lomov, S.V. Mathematical modelling of the structure and properties of woven fabrics. Laboratory practicum, St.-Petersburg State University of technology and Design, 1997, 32 p. (in Russian)
- I.4. Lomov, S.V., I. Verpoest and F. Robitaille, *Manufacturing and internal geometry of textiles*, in *Design and manufacture of textile composites*, A. Long, Editor. 2005, Woodhead Publishing Ltd. p. 1-60.
- I.5. Lomov, S.V. Virtual testing to establish material formability, in: *Composite Forming Technologies*, A. Long, Editor, 2007 Woodhead Publishing Ltd, 80-116
- I.6. Boisse, P., Akkerman, R., Cao, J., Chen, J., Lomov, S. V., Long, A., Composites forming, *Advances in material forming. Esaform 10 years on*, ed Chinesta, F., Cueto, E., Springer, 2007, 61-79
- I.7. Verleye, B., M. Klitz, R. Croce, D. Roose, S.V. Lomov, and I. Verpoest, Computation of permeability of textile reinforcements with experimental validation for monofilament and woven fabrics, in *Studies in Computational Intelligence (SCI)*, vol 55. 2007, Springer Verlag: Berlin-Heidelberg. 93-109
- I.8. Lomov, S.V. and I. Verpoest, *Textile composite materials: Polymer matrix composites*, in *Encyclopedia of Aerospace Engineering*, R. Blockley and W. Shyy, Editors. 2010, John Wiley & Sons, Ltd. p. 2159-2176.

II. International peer-reviewed articles

- II.1. Lomov S.V., Gusakov A.V. Modellierung von drei-dimensionalen gewebe Strukturen, *Technische Textilien*, Bd.38, 1995, S.20-21
- II.2. Lomov S.V., Primachenko B.M., Truevtzev N.N. Two-component multi-layered woven fabrics: weaves, properties and computer simulation, *Int.J.Clothing Sci & Technology*, vol.9, N2, 1997, p.98-112
- II.3. Lomov S.V., Truevtzev N.N. A software package for the prediction of woven fabrics geometrical and mechanical properties, *Fibres & Textiles in Eastern Europe*, vol.3, N2, 1995, p.49-52
- II.4. Sztut I.I., Bezin P.B., Lomov S.V. The use of aramide filaments (SVM) in the structure of bicomponent threads, *Fibres & Textiles in Eastern Europe*, vol.3, N1, 1995, p.30-32
- II.5. Grishanov S.A., Lomov S.V., Harwood R.J., Cassidy, C., Farrer, C.. The simulation of the geometry of two-component yarns, *J.Textile Institute*, part I: vol 88(1), N2, 1997, p.118-131;
- II.6. Grishanov S.A., Lomov S.V. , Cassidy, C., Harwood R.J., The simulation of the geometry of two-component yarns, *J.Textile Institute*, part II: vol.88(1), N4, 1997, p.352-372
- II.7. Rudin A.E., Truevtzev N.N., Lomov S.V. Mathematical simulation of yarn formation in ring spinning, *Fibres & Textiles in Eastern Europe*, vol.4, N2, 1996, p.25-28
- II.8. Rudin A.E., Truevtzev N.N., Lomov S.V. Predicting ring-spun yarn tenacity, *Fibres & Textiles in Eastern Europe*, vol.5, N2, 1997, p.27-30
- II.9. Lomov S.V. Predicting model for needle penetration of a woven fabric, *Int.J.Clothing Sci & Technology*, vol.10, N2, 1998, p.91-103
- II.10. Harwood R.J., Grishanov S.A., Lomov S.V., Cassidy, T.. Modelling of two-component yarns. Part I: The compressibility of yarns, *J.Textile Institute* , vol 88(1), N4, 1997, p.373-400
- II.11. Harwood R.J., Liu, J., Grishanov S.A., Lomov S.V. , Cassidy, C. Modelling of two-component yarns. Part II: Creation of the visual images of yarns, *J.Textile Institute* , vol 88(1), N4, 1997, p.400-414
- II.12. Belov E., Lomov S.V. Experimental investigation into loop forming (loss of stability) by turning of threads, *Fibres & Textiles in Eastern Europe*, vol.5, N2, 1997, p.23-26
- II.13. Gusakov, A.V. and S.V. Lomov, Parametric studies of the internal structure of 3D woven fabrics. *Fibres & Textiles in Eastern Europe*. **6(2)** pp. 60-63, 1998
- II.14. Lomov, S.V. and A.V. Gusakov, Mathematical modelling of 3D and conventional woven fabrics. *International Journal of Clothing Science & Technology*. **10(6)** pp. 90-91, 1998

- II.15. Lomov S.V., Cassidy C. Anisotropy of fusible interlinings mechanical properties, *Int.J.Clothing Sci & Technology*, vol.11, 1999, pp.40-45
- II.16. Belov, E.B., Lomov S.V., Truevtzev N.N., Bradshaw M., Harwood R., On the problem of fancy yarn formation. *Fibres & Textiles in Eastern Europe*. 7(2) pp. 32-34, 1999
- II.17. Lomov, S.V. Gusakov, A.V. Huysmans, G. Prodromou, A. Verpoest, I. Textile geometry preprocessor for meso-mechanical models of woven composites, *Composites Science and Technology*, vol. 60, 2000, pp.2083-2095
- II.18. Lomov, S.V., Verpoest, I. Compression of woven reinforcements: a mathematical model, *J.of Reinforced Plastics and Composites*, vol.19, N 16, 2000, p. 1329-1350
- II.19. Lomov, S.V., Truevtzev, A.V., Cassidy, C. A predictive model for the fabric-to-yarn bending stiffness ratio of a plain-woven set fabric, *Textile Research Journal*, vol.70, N12, 2000, p.1088-1096
- II.20. Lomov, S.V., Huysmans, G., Verpoest, I. Hierarchy of textile structures and architecture of fabric geometric models. *Textile Research Journal*, vol.71, N6, p.534-543, 2001
- II.21. S.V.Lomov, G.Huysmans, Y.Luo, R.S. Parnas, A.Prodromou, I.Verpoest, F.R. Phelan, Textile composites: Modelling strategies, *Composites A*, vol. 32, N 10, 1379-1394, 2001
- II.22. S.V.Lomov, E.B.Belov, T.Bischoff, S.B.Ghosh, T.Truong Chi, I.Verpoest, Carbon composites based on multi-axial multi-ply stitched preforms. Part 1: Geometry of the preform, *Composites A*, vol 33, N9, 2002, 1171-1183
- II.23. S.V.Lomov, A.Nakai, R.S.Parnas, S. Bandyopadhyay Ghosh, I.Verpoest, Experimental and theoretical characterisation of the geometry of flat two- and three-axial braids, *Textile Research Journal*, vol 72, N1, 2002, 706-712
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- II.25. Belov, E.B., S.V. Lomov, N.N. Truevtsev, M.S. Bradshaw, R.J. Harwood. Study of yarn snarling. Part II: Mathematical modelling, *Journal of the Textile Institute Part 1: Fibre Science and Textile Technology*, 93, N4, 2002, 366-385
- II.26. J.-F.Delerue, S.V.Lomov, R.S.Parnas, I.Verpoest, M.Wevers, Pore network modelling of permeability for textile reinforcements, *Polymer Composites*, 24, N3, 2003, 344-357,
- II.27. S.V.Lomov, I.Verpoest, M.Barburski, J.Laperre, Carbon composites based on multi-axial multi-ply stitched preforms. Part 2: KES-F characterisation of the deformability of the preforms at low loads, *Composites A*, vol 34, N4, 2003, 359-370
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- II.46. Wambua, P., Vangrimde, B., Lomov, S., Verpoest, I. The response of natural fibre composites to ballistic impact by fragment simulating projectiles, *Composite Structures*, 77, 2007, 232-240
- II.47. Lomov, S.V., D.S. Ivanov, I. Verpoest, M. Zako, T. Kurashiki, H. Nakai and S. Hirose *Meso-FE modelling of textile composites: Road map, data flow and algorithms*. *Composites Science and Technology*, 67, 2007, 1870-1891.
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V. Own dissertations

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VII. Patents and software

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