

Peter Vitruk, PhD, MInstP, CPhys

E-mail: [pvitruk@lightscalpel.com](mailto:pvitruk@lightscalpel.com)

## **SUMMARY**

Dr. Peter Vitruk was born and raised in Ukraine. He earned his PhD degree in Physics from the Moscow Physics and Technology Institute, Moscow in the late 1980s in the former USSR. In the 1990s he held Research Scientist position with The Academy of Sciences in the former USSR and then a Royal Society Visiting Research Fellow position at Heriot-Watt University in Edinburgh, Scotland, UK. He later worked as Senior Scientist with Synrad Inc. in Seattle, WA, and then as Chief Scientist with Luxar/ESC/Lumenis also in Seattle, WA. In 2002 Dr. Vitruk founded Luxarcare LLC – an exclusive certified Luxar laser service and accessories provider for 12,000+ surgical Luxar laser installations around the globe. In 2005 he founded Aesculight LLC and LightScalpel LLC – the only American based designer and manufacturer of surgical CO<sub>2</sub> lasers for small office out-patient market. Dr. Vitruk has authored 10 patents and over 20 articles on CO<sub>2</sub> lasers, and is a Member of The Institute of Physics, UK. In 2017 he founded the American Laser Study Club, an educational platform that helps physicians, dentists, veterinarians, and practice staff members to excel at efficient and safe application of laser energy in everyday practice. He is married to his wife of 34 years Natasha and they together have two children, Olga and Alexander.

## **EDUCATION**

1985 - 1990 PhD in Physics

1979 - 1985 MSc in Physics

Both from Department of Molecular and Chemical Physics, Moscow Physics & Technology Institute, Moscow, USSR

## **EXPERIENCE**

06/17 - Present - Founder, American Laser Study Club, Bothell, WA

04/03 - Present - Founder, Luxarcare LLC, Aesculight LLC, LightScalpel LLC, Bothell, WA

11/98 - 05/02 - Chief Scientist, Luxar Corp.- ESC Medical - Lumenis Ltd, Bothell, WA

07/95 - 08/98 - Senior Scientist and Program Manager, Synrad, Inc., Bothell/Mukilteo, WA

03/91 - 06/95 - Royal Society Visiting Research Fellow, Department of Physics, Heriot-Watt University, Edinburgh, UK

11/85 - 03/91 - Research Scientist, USSR Academy of Sciences, Moscow, USSR

## **PROFESSIONAL AFFILIATIONS & HONORS**

06/17 – Present - Founder, Faculty, American Laser Study Club, Bothell, WA

06/94 - Present - Member, Chartered Physicist, The Institute of Physics, London, UK

## PRINCIPAL PUBLICATIONS, PRESENTATIONS AND LECTURES

1. P. Vitruk, *"RF capacitive discharges in diffusion-cooled slab gas lasers"*, PhD Thesis, Moscow Physics & Technology Institute, Moscow, USSR, 1990.
2. P. Vitruk and N. Yatsenko, *"Small RF excited waveguide CO<sub>2</sub> laser of medium power"*, Pis'ma Zh. Tekh. Fiz., 15, 1989, 1-5.
3. A. Colley, P. Vitruk, H. J. Baker and D. R. Hall, *"Compact sealed slab waveguide CO<sub>2</sub> lasers at 1 kW"*, Proc. CLEO'92, Anaheim, May 10-15, 1992, p. 608.
4. M. Abramski, H. J. Baker, A. D. Colley, D. R. Hall, C. J. Shackleton and P. Vitruk, *"Compact diffusion-cooled array and slab CO<sub>2</sub> lasers at the 1kW level"*, Proc. Int. Conf. on Laser Advanced Materials Processing, Nagaoka, Japan, June 1992, 73.
5. P. Vitruk, H. J. Baker and D. R. Hall, *"The stability and characteristics of CO<sub>2</sub> slab laser alpha RF discharges at 100 MHz"*, Proc. 10-th Int. Conf. on Gas Discharges and their Applications, Swansea, UK, 13-18 September, 1992, 2, pp. 534-535.
6. P. Vitruk, H. J. Baker and D. R. Hall, *"The characteristics and stability of high power transverse radio frequency discharges for waveguide CO<sub>2</sub> slab laser excitation"*, J. Phys. D.: Appl. Phys. 25, 1992, 1767-1776.
7. J. Baker, A. D. Colley, D. R. Hall, C. J. Shackleton, F. Villarreal and P. Vitruk, *"High power cw slab-waveguide molecular lasers"*, 11-th UK Conf. on Quantum Electronics, Belfast, Sept. 1993.
8. P. Vitruk, H. J. Baker and D. R. Hall, *"Similarity and scaling in diffusion-cooled RF excited carbon dioxide lasers"*, IEEE Journal of Quantum Electronics, QE-30, 1994, N7, pp.1623-1634.
9. A. Colley, P. Vitruk, L. A. Doyle, H. J. Baker and D. R. Hall, *"RF discharge uniformity control in kilowatt class, RF excited, large-area electrode CO<sub>2</sub> lasers"*, Proc. CLEO-Europe'94, Amsterdam, Aug 1994, CML1.
10. G. Yu, H. J. Baker, P. Vitruk and D. R. Hall, *"Transverse RF excited, table-top fast-axial-flow CO<sub>2</sub> laser with 1kW output power"*, Proc. Conf. Lasers and Electro-Optics, CLEO-Europe'94, Amsterdam, Holland, 28 Aug-2 Sept 1994, CWH3.
11. F. Villarreal, A. A. Cameron, A. D. Colley, P. Vitruk, H. J. Baker and D. R. Hall, *"High pressure CW molecular gas lasers using narrow gap slab waveguides"*, Proc. CLEO'95, Baltimore, USA, June 1995, CMJ4.
12. P. Vitruk, R. J. Morley, H. J. Baker and D. R. Hall *"High power continuous wave atomic Xe gas laser with radiofrequency excitation"*, Appl. Phys. Lett., 67, 1995, N 10, pp. 1366-1368.
13. P. Vitruk et al, *"700 W, diffusion-cooled, large area, 40.68 MHz excited CO<sub>2</sub> laser employing split-wave hybrid confocal resonator"*, SFHPLAC'98, Santa Fe, NM, 26-30 April 1998.
14. P. Vitruk. *"[Soft tissue cutting with CO<sub>2</sub> and diode lasers](#)"*, Veterinary Practice News. 2012; 11:24.
15. P. Vitruk. *"[Surgical CO<sub>2</sub> laser demystified](#)"*, Veterinary Practice News. 2013; 1:28-29.
16. P. Vitruk. *"[How CO<sub>2</sub> lasers cut, coagulate soft tissue](#)"*, Veterinary Practice News. 2014; 12:36-37.
17. P. Vitruk, R. Convissar, G. Romanos. *"Near-IR Laser Non-Contact and Contact Tip-Tissue Thermal Interaction Differences"*, Academy of Laser Dentistry 2014 Conference. Scottsdale, AZ. Feb 2014.
18. P. Vitruk, *"[Oral soft tissue laser ablative and coagulative efficiencies spectra](#)"*, Implant Practice US. 2014;7(6):19-27.
19. R. Levine, P. Vitruk. *"[Laser-Assisted Removal of Irritation Fibroma](#)"*, Global Laser Oral Health. 2014;11.
20. P. Vitruk, *"[Laser use in scaling and root planning](#)"*, JADA, Dec 2015, Volume 146(12):866.
21. R. Levine and P. Vitruk, *"[Laser-assisted operculectomy](#)"*. Compendium of Dental Education. 2015 Sep;36(8):561-567.
22. E. Linden and P. Vitruk, *"[Implant-safe settings for SuperPulse 10,600 nm CO<sub>2</sub> laser-assisted, closed flap peri-implantitis treatment](#)"*. Implant Practice US. 2015; 8(6):26-28.
23. M. Kaplan and P. Vitruk, *"[10,600 nm CO<sub>2</sub> laser orthodontic procedures](#)"*. Ortho Practice US. 2015; 6(6):53-57.
24. D. Mader, P. Vitruk. *"Basics of Veterinary Laser Surgery"*. NAVC (VMX) Symposium. Orlando, FL. January 17, 2015.
25. J. Godbold, P. Vitruk. *"CO<sub>2</sub> Laser Surgery: The Science of the Best Soft Tissue Wavelength"*. WVC Symposium. Las Vegas, NV. February 16, 2015.
26. J. Krauser and P. Vitruk, *"[The 10.6 μm SuperPulse CO<sub>2</sub> laser may alleviate the late implant failure linked to tissue tension](#)"*. Implant Practice US. 2015; 8(5):30-35.
27. E. Linden and P. Vitruk, *"[SuperPulse 10.6 μm CO<sub>2</sub> laser-assisted, closed flap treatment of peri-implantitis](#)"*. Implant Practice US. 2015;8(4):34-38.

28. R. Levine and P. Vitruk, "[Enhanced hemostasis and improved healing in CO<sub>2</sub> laser-assisted soft tissue oral surgeries](#)". Implant Practice US. 2015;8(3):34-37.
29. A. Hazelbaker, M. Kaplan and P. Vitruk, "[Infant frenectomy with 10,600 nm Dental CO<sub>2</sub> laser](#)". WAGD Newsletter. 2015 Apr;34:10-12.
30. C. Cobb and P. Vitruk, "[Effectiveness of a super-pulsed CO<sub>2</sub> laser for removal of biofilm from three different types of implant surfaces: an in vitro study](#)". Implant Practice US. 2015;8(3):20-28.
31. J. Rosenlicht and P. Vitruk, "[Ablation and sulcular debridement utilizing the CO<sub>2</sub> laser for denture-induced gingival hyperplasia](#)". Implant Practice US. 2015;8(2):34-37.
32. P. Vitruk, "Myths and Physics of Soft Tissue Dental Lasers", Academy of Laser Dentistry 2015 Annual Meeting, Palm Springs, CA, Feb 5-7, 2015.
33. C. Cobb and P. Vitruk, "Microbial Decontamination of Three Different Implant Surfaces Using a SuperPulse CO<sub>2</sub> 10,600 nm Laser: An in Vitro Study", ALD 2015 Annual Meeting, Palm Springs, CA, Feb 5-7, 2015.
34. G. Selig and P. Vitruk, "Implant Placement Surgeries Utilizing SuperPulse 10,600 nm CO<sub>2</sub> Laser", Academy of Laser Dentistry 2015 Annual Meeting, Palm Springs, CA, Feb 5-7, 2015.
35. W. Nordquist and P. Vitruk, "Efficacy of the CO<sub>2</sub> Laser to Sterilize and Ablate the Bacterial Laded Epithelial Lining of the Diseased Gingival Sulcus", Academy of Laser Dentistry 2015 Annual Meeting, Palm Springs, CA, Feb 5-7, 2015.
36. E. Linden and P. Vitruk, "SuperPulse 10,600 nm CO<sub>2</sub> Laser-Assisted Soft-Tissue Procedures in Periodontics", Academy of Laser Dentistry 2015 Annual Meeting, Palm Springs, CA, Feb 5-7, 2015.
37. R. Levine and P. Vitruk, "Laser Assisted Dental Procedures Utilizing the LightScalpel LS-1005 SuperPulse 10,600 nm CO<sub>2</sub> Laser in the Area of Special Needs Dentistry", Academy of Laser Dentistry 2015 Annual Meeting, Palm Springs, CA, Feb 5-7, 2015.
38. M. Kaplan and P. Vitruk, "Infant Frenulectomies with SuperPulse 10,600 nm Dental CO<sub>2</sub> Laser LightScalpel LS-1005", Academy of Laser Dentistry 2015 Annual Meeting, Palm Springs, CA, Feb 5-7, 2015.
39. N. Berger and P. Vitruk, "Everyday Laser Surgery with Advanced CO<sub>2</sub> Lasers, Accessories, & Techniques" NAVC (VMX) Symposium. Orlando, FL. January 16, 2016.
40. J. Godbold and P. Vitruk, "The Latest in Laser Surgery", WVC Symposium. Las Vegas, NV. March 7, 2016.
41. P. Vitruk, "Oral Soft Tissue Laser Ablation and Coagulation Depths Spectra", Academy of Laser Dentistry 2016 Annual Meeting, Orlando, FL, Apr 14-17, 2016.
42. E. Linden and P. Vitruk, "SuperPulse 10,600 nm CO<sub>2</sub> Laser Assisted Closed Flap Treatment of Peri-Implantitis", Academy of Laser Dentistry 2016 Annual Meeting, Orlando, FL. Apr 14-17, 2016.
43. R. Levine and P. Vitruk, "Improved Hemostasis and Healing in CO<sub>2</sub> Laser Soft Tissue Surgeries", Academy of Laser Dentistry 2016 Annual Meeting, Orlando, FL, Apr 14-17, 2016.
44. G. Selig and P. Vitruk, "LightScalpel CO<sub>2</sub> Laser Assisted Implant Placement Surgeries in Medically Compromised Patients", Academy of Laser Dentistry 2016 Annual Meeting, Orlando, FL, Apr 14-17, 2016.
45. M. Kaplan and P. Vitruk, "10,600 nm SuperPulse CO<sub>2</sub> Laser Frenectomies and Gingivectomies", Academy of Laser Dentistry 2016 Annual Meeting, Orlando, FL, Apr 14-17, 2016.
46. C. Cotca and P. Vitruk, "New CO<sub>2</sub> Laser Modified Technique Protocol for Solar Cheilitis Treatment", Academy of Laser Dentistry 2016 Annual Meeting, Orlando, FL, Apr 14-17, 2016.
47. J. Krauser and P. Vitruk, "Avoid Tension: The 10,600 nm SuperPulse CO<sub>2</sub> Laser May Alleviate the Late Implant Failures", Academy of Laser Dentistry 2016 Annual Meeting, Orlando, FL, Apr 14-17, 2016.
48. P. Fabbie, L. Kundel and P. Vitruk. "[Tongue-Tie Functional Release](#)". Dent Sleep Practice. Winter 2016: 40-45.
49. P. Vitruk and R. Levine. "[Hemostasis and Coagulation with Ablative Soft-Tissue Dental Lasers and Hot-Tip Devices](#)". Inside Dentistry. 2016 Aug;12(8):37-42.
50. R. Levine and P. Vitruk. "[Laser Mucocele Removal in Pediatric Patients](#)". Dental Town 2016 Sept;17(9):10-111.
51. R. Levine and P. Vitruk. "[The Use of a 10,600-nm CO<sub>2</sub> Laser Mandibular Vestibular Extension in a Patient with a Chromosomal Disorder](#)". Compend Contin Educ Dent. 2016 Sept;37(9):527-533.
52. J. Godbold and P. Vitruk, PhD "Everyday Laser Surgery with Advanced CO<sub>2</sub> Lasers, Accessories and Techniques" NAVC (VMX) Symposium. Orlando, FL. February 4, 2017.
53. P. Vitruk. "Laser Frenectomy: The Myths and Science of Soft Tissue Surgical Lasers", 2nd AAMS Congress, Chicago, IL. March 1-5, 2017.
54. P. Vitruk. "10,600 nm CO<sub>2</sub> Laser Frenectomy Settings", LightScalpel Laser User Symposium at Academy of Laser Dentistry 2017 Annual Meeting. Tucson, AZ. April 7-8, 2017.

55. P. Vitruk "Laser Frenectomy: The Myths and Science of Soft Tissue Surgical Lasers.", 1st Annual Meeting "Pediatric Tongue and Lip Ties: A Multidisciplinary Approach to Diagnosis and Treatment". Phoenix, AZ. April 9, 2017.
56. P. Vitruk. "[Laser Education, Science and Safety: a review of dental laser education standards](#)", Dental Town, June 2017: 62-67.
57. M. Kaplan, P. Vitruk. "[10,600-nm CO<sub>2</sub> Laser Frenectomies in Pediatric Patients](#)", Dent Sleep Practice. Fall 2017:40-42
58. K. Wuertz, P. Vitruk. "[SuperPulse 10,600 nm CO<sub>2</sub> Laser Revision of Lingual Frenum Previously Released with a Diode Hot Glass Tip](#)", Dent Sleep Practice. Winter 2017:40-42.
59. P. Vitruk and J. Bellows, "Everyday Laser Surgery with Advanced CO<sub>2</sub> Lasers, Accessories, and Techniques", NAVC (VMX) Symposium. Orlando, FL. Feb 3, 2018
60. P. Vitruk and D. Duclos, "Laser Skin Interaction Science & CO<sub>2</sub> Laser Surgery in Dermatologic Applications" WVC Symposium. Las Vegas, NV. March 4, 2018.
61. P. Vitruk. The Physics and Myths of Surgical Lasers, ALSC Inaugural Symposium, April 8, 2018, Orlando, FL.
62. C. Riek, P. Vitruk. "[Incision and Coagulation/Hemostasis Depth Control During a CO<sub>2</sub> Laser Lingual Frenectomy](#)", Dent Sleep Practice. Spring 2018:32-38.
63. M. Geis, L. Kundel, P. Vitruk. [Functional Frenectomy \(Osteopathically Guided\)](#). Dent Sleep Practice. Summer 2018:30-32.
64. K. Wuertz and P. Vitruk. "[Frenectomies & Beyond: A Modern Approach to Laser Education that Challenges Traditional Methods Addressing Ankyloglossia and Tethered Oral Tissues](#)". Southern Maryland Dental Society, College Park, MD. April 28-29, 2018.
65. P. Vitruk. "[The Physics and Myths of Surgical Lasers](#)". NAVDF, Wailea, HI. May 2, 2018
66. D. Batoon and P. Vitruk. [Sleep Apnea: Diagnosis and Treatment. Addressing Ankyloglossia as a Possible Contributing Factor](#)". San Diego Convention Center, San Diego, CA. June 22-23, 2018.
67. K. Wuertz and P. Vitruk. "[Frenectomies & Beyond: A Modern Approach to Laser Education that Challenges Traditional Methods Addressing Ankyloglossia and Tethered Oral Tissues](#)". Chesapeake Community of Hope, Chesapeake, VA. August 24-25, 2018.
68. M. Kaplan and P. Vitruk. "[Pediatric Tongue and Lip Ties: Diagnosis and Treatment with Soft Tissue Lasers](#)". New Jersey Health Professionals Development Institute, River Edge, NJ. October 26-27, 2018.
69. J. Thomas and P. Vitruk. "[Infant Laser Frenectomy. Myths and Physics of Surgical and Dental Lasers](#)". Bothell, WA. November 2-3, 2018.
70. L. Kundel; M. Kaplan; P. Vitruk. "[Laser Frenectomy: Myths and Science, Pediatric Patients with Compromised Airway and Osteopathically Guided](#)". Greater New York Dental Mtg., Jacob K. Javits Convention Center, New York, NY. November 27, 2018.
71. J. Thomas and P. Vitruk. "[Infant Laser Frenectomy. Myths and Physics of Surgical and Dental Lasers](#)". Bothell, WA. November 30 - December 1, 2018.
72. P. Vitruk. "[Myths and Physics of Surgical and Dental Lasers](#)". Bothell, WA. January 5, 2019.
73. P. Vitruk and N. Berger, "[Laser Surgery and the Basics of Laser-Tissue Interaction](#)", VMX (NAVC) Symposium. Orlando, FL. January 19th, 2019.
74. M. Kaplan; M. Chatham; P. Vitruk. "[Pediatric Tongue and Lip Ties: Diagnosis and Treatment with Soft-Tissue Lasers](#)." UTHealth School of Dentistry. Houston, TX. January 25-26, 2019.
75. M. Kaplan, C. Watson-Genna and P. Vitruk. "[Pediatric Tongue- and Lip-Ties: Diagnosis and Treatment with Soft-Tissue Lasers](#)." Dental Studies Institute of New Jersey, Fairfield, NJ. February 2-3, 2019.
76. M. Kaplan and P. Vitruk. "[Pediatric Hard and Soft Tissue Laser Dentistry](#)". Bothell, WA. February 8-9, 2019.
77. K. Wuertz and P. Vitruk. "[Frenectomies & Beyond: A Modern Approach to Laser Education that Challenges Traditional Methods Addressing Ankyloglossia and Tethered Oral Tissues](#)". Sleep Therapy Center, San Antonio, TX. March 1-2, 2019.
78. Riek C, Bahnerth S, Vitruk P. "[CO<sub>2</sub> Laser Functional Frenectomy](#)", Dent Sleep Practice. Spring 2019:34-36.
79. P. Vitruk. "[Veterinary Soft Tissue Surgical Laser Workshop](#)". ALSC 2019 Symposium. Phoenix, AZ. March 30, 2019.
80. P. Vitruk. "[Soft Tissue Surgical Laser Workshop](#)". ALSC 2019 Symposium. Phoenix, AZ. March 29, 2019.
81. M. Kaplan and P. Vitruk. "[Pediatric Tongue & Lip-Ties & Laser Frenectomies](#)". Southern Maryland Dental Society, College Park, MD. April 13-14, 2019.

82. M. Kaplan and P. Vitruk. *"Lasers in Pediatric Dentistry: Hard and Soft Tissue Applications"*. University of Minnesota School of Dentistry, Minneapolis, MN. May 4-5, 2019.
83. M. Kaplan, T. Erson, M. Mugno and P. Vitruk. *"Pediatric Tongue- and Lip-Ties and Laser Frenectomies"*. Red Rock Periodontics & Implantology, Las Vegas, NV. May 10-11, 2019.
84. M. Kaplan and P. Vitruk. *"Pediatric Hard and Soft Tissue Laser Dentistry"*. Dental Studies Institute of New Jersey, Fairfield, NJ. May 19, 2019.
85. P. Vitruk. *"[Hot Glass Tip Diode Frenectomies ARE NOT Laser Frenectomies](#)"*. Dent Sleep Practice. Summer 2019:48-50.
86. S. Zaghi, S. Pinkerton, C. Pinto, P. Vitruk. *"Functional Approach to Sleep, Breathing and Laser Frenuloplasty"*. Bothell, WA. May 31 - June 2, 2019.
87. M. Kaplan, C. Riek, S. Klein and P. Vitruk. *"Functional Frenectomies Across a Lifespan: A multidisciplinary approach to why, when, and how"*. Scottsdale, AZ. June 15-16, 2019.
88. M. Kaplan, A. Adams and P. Vitruk. *"Pediatric and Adult Tongue- and Lip-Ties and Laser Frenectomies"*. The Raphael Center for Integrative Education, Clifton, NJ. July 13-14, 2019.
89. P. Vitruk *"Laser physics and equipment"*. In: Winkler CJ, ed. Laser Surgery in Veterinary Medicine. Hoboken, NJ: Wiley Blackwell; 2019:3-13.
90. P. Vitruk *"The ideal laser scalpel"*. In: Winkler CJ, ed. Laser Surgery in Veterinary Medicine. Hoboken, NJ: Wiley Blackwell; 2019:32-41.
91. A. Glazkova and P. Vitruk. *"[CO<sub>2</sub> Laser Surgery Post-Operative Pain and Healing: A Partial Literature Review](#)"*. Dent Sleep Practice. Winter 2019:28-34.