ACADEMICIAN

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CURRICULUM VITAE

Dr. Stepan Essaian is founder, President and CTO of SPECTRALUS Inc. and has over 20 years of experience in solid-state optoelectronics, physics and technology of semiconductor devices, telecommunications systems and networks.

In USA Dr. Essaian started his carrier as a Visiting Professor by invitation of Rutgers University: from December 1991 and August 1994 he became US Permanent Resident by receiving Green Card as a Scientist with extraordinary achievements.

From May 2000 to December 2002, Dr. Essaian serves as the Chief Scientist for Solid State Photonix/Teraburst Networks Co, a leading developer of an OMO analog switch for OXCs. Prior to working at SSP, Dr. Essaian directed the development of SiGe-based technology used in the wireless and networking marketplace at National Semiconductor Co. Before National Semiconductor, he served as a Visiting Professor at the Department of Material Science of Rutgers University. Before emigration to the US, Dr. Essaian worked as a Senior Scientist at A.F. Ioffe Physico-Technical Institute in St.-Petersburg, Russia, and as Visiting Professor of Optics at Yerevan State University, Armenia, where he carried out research work in the field of acousto-optic, electro-optic, photo-refractive and nonlinear-optic effects in dielectrics and semiconductor materials. Dr. Essaian is an author of over 100 publications and he holds 12 patents in the field of advanced materials and processes and optical-related technologies. In addition, he has 5 patents-pending on optical switching and the PPLN/PPLT technology.

Educations:

MS in Semiconductor Physics and Technology; Yerevan State Engineering University, Armenia PhD in Solid State Physics, A.F. Ioffe Physico-Technical Institute, St.-Petersburg, Russia Sc.D in Solid State Physics, A.F. Ioffe Physico-Technical Institute, St.-Petersburg, Russia

Related publications:

1. Optical Second Harmonic Generation in the LiNb0₃ Wave Guide.

S.Kh. Essaian, V.V. Lemanov and B.V. Sukharev.

Jour. Tech. Phys. Lett. (1978), 4(12), 747-49.

2. Circular Photogalvanic Effect in Pb₅Ge₃0₁₁.

V.V. Lemanov, S.Kh. Essaian, A.Yu. Maksimov and V.T. Gabrielyan.

JETP Lett. (1981), 34(8), 444-46.

 Generation of Second Optical Harmonic in the Course an Incommensurate Phase Transition in K₂SeO₄ Crystals.

A.M. Arutunyan, S.Kh. Essaian, B. Brezina and V.V. Lemanov.

Soviet Phys.Solid State (1982), 24(5), 814-16.

4. Photogalvanic Effects in Ferroelectrics Pb₅Ge₃0₁₁.

S.Kh. Essaian, V.V. Lemanov and A.Yu.Maksimov.

Soviet Phys. Solid State (1984), 26(3). 395-97.

5. Optical Second Harmonic Study of the Incommensurate Phase in K₂SeO₄ and (NH₄)₂BeF₄ Crystals.

A.M. Arutunyan, S.Kh. Essaian and V.V. Lemanov.

Ferroelectics Letters (1983), 2, 119-21.

6. Optical Second Harmonic Generation in LiNb0₃ Crystals Induced by a Photovoltaic Grating. S.Kh. Essaian, V.V. Lemanov and A.M. Arutunyan.

Ferroelectrics Letters (1983), 1,13-16

7. Anisotropy Photoconductivity in Ferroelectrics.

S.Kh. Essaian, E.L. Ivchenko, V.V. Lemanov and A. Yu Maksimov.

JETP Letters (1984), 40(11), 462-64.

8. Photogalvanic Current in the Incommensurate Phase in Ba₂NaNb₅0₁₅.

S.Kh. Essaian, V.V. Lemanov and A. Yu.Maksimov.

Ferroelectric Letters (1985), 4, 1-4.

9. Anisotropy Photoconductivity and Magnetic Field Induced Photogalvanic Effect in Pb₅Ge₃O₁₁.

S.Kh. Essaian, E.L. Ivchenko, V.V. Lemanov, A.Yu. Maksimov and G.E. Pikus.

Japan Jour. Appl. Phys. (1985), 24 (Supl 24-2), 299-301.

10. The Growth and Optical Properties of KTi0P0₄ Single Crystals.

G.S. Damazyan, S.Kh. Essaian and A.L. Manukyan.

Kristallographia (1986), 31(2), 408-09.

11. Light Absorption and Linear Photogalvanic Effect Due to Incommensurate Superstructure in the Ferroelectric Ba₂NaNb₅0₁₅.

S.Kh. Essaian, E.L. Ivchenko and A.G. Kavetskii.

Soviet Phys. Solid State (1988), 30(9), 2746-52.

12. Reversible Pyroelectric and Photogalvanic Currents in Epitaxial Pb(Zr,Ti)0₃ Thin Films.

S.K. Essaian, J. Lee, J. Prohaska and A. Safari.

Appl. Phys. Lett. (1994), 64(3), 294-96.

13. Fatigue and photoresponse of Lead Zirconate Titanate Thin Film Capacitor.

J.Lee, S. Essaian, A.Safari and R.Ramesh.

Integrated Ferroelectrics (1995), 6, 289-300.

14. High-efficient green laser source for compact projectors.

John Khaydarov, Andrei Shchegrov, Stepan Essaian, Greg Nemet, Suren Soghomonyan, Mkhitar Simonyan, Hakob Danielyan, and Gevorg Gabrielyan,

Proceedings of 2009 SID Display Week INTERNATIONAL SYMPOSIUM, to be published.