

Tasoltan Tazretovich Basiev, an OSA Fellow known for his work in solid-state lasers, passed away on 26 February 2012 in Moscow, Russia. He was 64.

Basiev was director of the A.M. Prokhorov General Physics Institute's laser materials and photonics department and scientific deputy director of the Institute's Laser Materials and Technology Research Center.

He was born in Moscow in 1947. In 1972, after receiving an M.S. in electrical engineering from the Moscow Power Engineering Institute-Technical University, he was named staff research physicist in the mono-crystal division of the P.N. Lebedev Physical Institute of the U.S.S.R. Academy of Sciences, where he was actively engaged in laser spectroscopy and solid-state physics.

From 1972 to 1984, Basiev progressed from staff research physicist to group leader involved in solid-state selective laser spectroscopy, the area of solid-state physics in which his work was most outstanding.

In 1977, he received a Ph.D. in physics and mathematics from the P.N. Lebedev Physical Institute Academy of Sciences. He was awarded a doctor of science in physics and mathematics (Habilitation) in 1984. He was an adjunct professor at the Moscow Physical Technical Institute from 1982 to 1991 and a professor in solid-state physics beginning in 1991.

Basiev played a key role in the study and application of lithium fluoride color center crystals for tunable near-infrared lasers. As a result of his contributions, scientists designed and fabricated large



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quantities of high figure-of-merit color-center crystals and tunable lasers with world record output characteristics.

Basiev pioneered methods for developing new laser crystals combining gain and self-stimulated Raman scattering features. He found a relationship between the optical parameters of stimulated Raman scattering and a structure of complex anion and cation groups in these crystals. These new self-Raman laser media with a record gain were the basis of a large number of developed pico- and nanosecond Raman lasers operating in various ranges of the optical spectrum with energy in excess of one joule and peak power of dozens of megawatts.

Basiev actively participated in the development of physical-chemical methods for new middle-infrared laser media. Due in part to his efforts, researchers developed sub-nanoscale complexes of rare earth ions coherently related via quadropole-quadropole interactions. This work was important for quantum computing.

Basiev also initiated research on laser ceramics at the General Physics Institute of the Russian Academy of Sciences (RAS), resulting in the development of unique fluoride laser ceramics.

He was awarded the Lenin Komsomol Prize (the U.S.S.R.'s first national prize for young scientists) in 1976. A decade later, he received the International Prize of the U.S.S.R. and Hungarian Academy of Sciences for his outstanding contributions to solid-state and laser physics. Among his other awards were the General Physics Institute Prize for Scientific Research (1985, 1989, 2009); A.M. Prokhorov Academy of Engineering Sciences Gold Medal (2003); and the President's Fellowship for Outstanding Russian Scientists (2003, 2000, 1997, 1994).

He was a member of the Russian and Moscow Optical Societies, a member of the European Physical Society, a Fellow of the Optical Society; an Erskine Fellow of Canterbury University, New Zealand; a member of the A.M. Prokhorov Engineering Science Academy; a corresponding member of the RAS; and an editor of the *Journal of Optical Materials*. He contributed more than 400 peer-reviewed articles, three books and more than 40 reviews. He held nearly 30 patents.

Basiev is survived by his wife and two children.

If you would like to make a memorial donation to the OSA Foundation in honor of Tasoltan Basiev, please visit www.osa-foundation.org/give.