

a fundamental understanding of the relationship between radar backscatter from the ocean and the ocean's underlying hydrodynamics.

Gaspar also pioneered in the study of nonlinear, resonant wave interactions and their relationship to electromagnetic backscatter from the ocean. His research included the first derivations of a number of important results involving wave-wave interactions at the ocean surface. And, as part of the same research effort, Gaspar and Michael B. Laing were the first to apply modern computational techniques to those kinds of problems. Following on from this work, Gaspar addressed various problems associated with imaging the ocean using synthetic and real aperture radars.

Using data collected during NASA's SEASAT mission, Gaspar identified a particular location near Nantucket where variations in the bottom topography of the ocean floor can be seen directly in remotely sensed radar imagery of the ocean surface. This observation and subsequent analysis provided impetus for the SEBEX experiment in 1982 and the research program Sea Surface Expressions of Bathymetry, which was carried out between 1980 and 1989.

During his later years at NRL, Gaspar was a key participant in a number of experiments associated with the simultaneous collection of data from ocean vessels and spaceborne and airborne sensors over the Gulf Stream. Through his efforts and guidance, NRL scientists demonstrated for the first time that in the open ocean it is possible to measure ocean currents remotely by using synthetic aperture radar.

Gaspar served as a US delegate to the Union of Radio Science and to the International Union of Geodesy and Geophysics. He served on various commissions and as an associate editor (1982-85) of the *Journal of Geophysical Research*.

Gaspar was an exceptional scientist and teacher. His legacy includes not only his many publications and accomplishments, but also a love of science and a way of doing science that he has passed on to his colleagues. He will be missed by all of us who knew and worked with him.

SCOTT R. CHUBB
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Washington, DC

Alexander Bruce Filuk

Alexander Bruce Filuk, a principal member of the technical staff of the ion beam physics department at Sandia National Laboratories in Albuquerque, New Mexico, died on 30 Sep-



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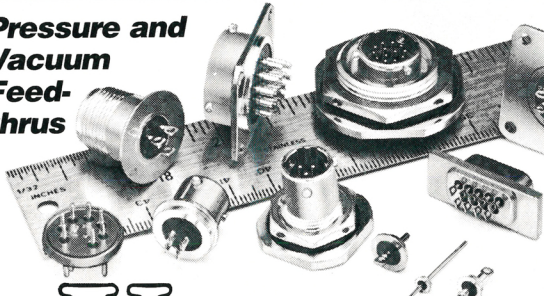
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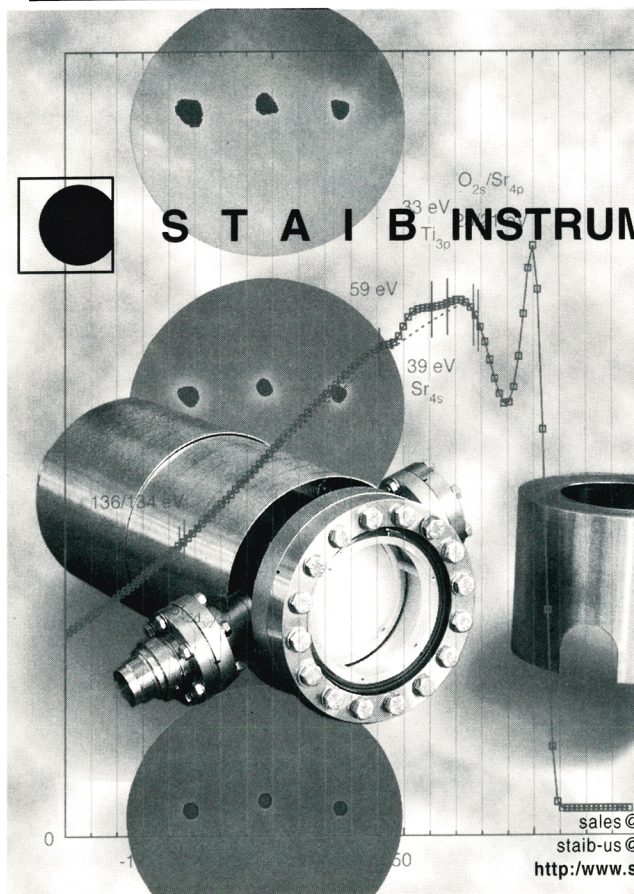
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tember 1997 from injuries sustained in a motorcycle accident. He was only 35 years old.

After receiving a BS in physics from the University of British Columbia, Alex went to the University of Maryland, where he earned an MS and PhD in plasma physics in 1986 and 1991, respectively. In his thesis research, Alex designed, built and fielded several diagnostics on the Maryland Spheromak, including a four-channel helium-neon quadrature interferometer to measure plasma density. He concluded that the plasma temperature was limited by an influx of neutral particles from the chamber walls. This finding presaged his identification of a similar limitation on ion current density in magnetically insulated ion diodes at Sandia.

In March 1991, Alex joined Sandia's inertial confinement fusion program, where he first helped analyze spectroscopic data obtained by Jim Bailey from ion diode acceleration gaps on the PBFA II accelerator. This work led to an unusually close and productive teaming between Alex, Jim and Yitzhak Maron of the Weizmann Institute of Science. Together, they developed spectroscopy as a precision tool for probing the fundamental physics of pulsed power devices. Alex also worked to advance the areas of atomic emission spectroscopy in cross electric and magnetic fields, charge exchange processes in dense anode plasmas and the application of ultraviolet and polarization spectroscopy to pulsed power devices.

Recently, Alex led a team in developing a laser-driven lithium ion source to meet the demanding requirements of light ion fusion in terms of plasma uniformity, density and expansion velocity. His colleagues are now preparing to follow his plan by testing this ion source on Sandia's SABRE accelerator.

Alex and his colleagues were looking forward to publishing up to 18 papers on field-limited and laser-produced ion sources, ion diode charge particle dynamics and atomic physics in high magnetic and electric fields.

Alex was an exceptional person and a complete man. To me, he seemed to uniquely combine a brilliant scientific mind, clarity of thought and communication, exceptional organization, a strong work ethic, concern for his fellow workers, athleticism, a strong moral character and a deep spirituality.

Alex Filuk was with us for far too short a time, and he will be deeply missed by all who knew and loved him.

THOMAS A. MEHLHORN
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Albuquerque, New Mexico ■