

Dr. Lewis M. Fraas

Dr. Fraas has been active in the development of Solar Cells and Solar Electric Power Systems since 1975. He led the research team at Boeing that demonstrated the first GaAs/GaSb tandem concentrator solar cell in 1989 with a world record energy conversion efficiency of 35%. He has over 30 years of experience at Hughes Research Labs, Chevron Research Co, and the Boeing High Technology Center working with advanced semiconductor devices.



Dr. Fraas joined JX Crystals in 1993, where he has led the development of advanced solar cells and concentrated sunlight systems. At JX Crystals, he pioneered the development of various thermophotovoltaic (TPV) systems based on the new GaSb infrared sensitive PV cell. In 1978 while at Hughes Research Labs, he published a pioneering paper proposing the InGaP/GaInAs/Ge triple junction solar cell predicting a cell terrestrial conversion efficiency of 40% at 300 suns concentration. This 40% efficiency has now been achieved and this cell is the predominant cell today for space satellites. It is now entering high volume production for terrestrial Concentrated Photovoltaic (CPV) systems.

Dr Fraas holds degrees from Caltech, Harvard, and USC. At Caltech, he studied Physics with Prof. Richard P. Feynman. Dr. Fraas has written over 150 technical papers, over 50 patents, and a book entitled Path to Affordable Solar Electric Power & The 35% Efficient Solar Cell (2005).