

# Photon Physics in Relation to the Birth, Understanding, Conservation and Death of Photographic Images

Dr Bruce Kaiser

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## ABSTRACT

It is an interesting fact that photons are used to fabricate photographs, they are used to view and enjoy photographs, they are used to analyze and discover how they are made molecularly and elementally, how to best restore and preserve them, and finally photons can destroy photographs!

So it is certainly vital that those charged with their custody, preservation and display should understand the fundamental physics of photons in relation to all of these events.

This talk will provide all with fundamental physics knowledge of the photon unlike they have ever thought possible providing them with a firm foundation for their future activity with photographs on all levels.

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## AUTHOR BIOGRAPHY

Dr. Kaiser has a Bachelor of Science in Physics, and a Masters and a PhD in Nuclear Engineering Science. In his technical career he has specialized in nuclear physics and high energy radiation interaction theory and holds 10 patents in that area (4 in the field of XRF). He has written over 80 technical papers in the fields of chemistry, physics, archaeology and conservation.

In his business career he has held several executive leadership positions: GE (Plant Manager of Nuclear Fuel Manufacturing), Battelle (Department Manager of Chemical Sciences Pacific Northwest National Laboratory), ABB (Vice-President of Nuclear Fuel), and Washington Group International (General Manager Government Technical Services).

He was also the principle in the starting up and building of KeyMaster Technologies beginning in 2000, a company that now manufactures the most advanced handheld xrf analytical instrument in the world. This company was acquired by Bruker July 2006.

He retired from Washington Group International, corporate leadership, in March of 2007 and now supports Bruker as a Chief Scientist focusing on XRF applications for Museums and Universities world wide. He was doing this as a hobby for 8 years and is now doing it full time. Over the past 8 years he has given more than 700 workshops in photon physics in Museums and Universities around the world, involving over 8000 folks.

He has a very broad and deep technical knowledge of the challenges facing archaeologists and curators and conservators of very diverse collections and materials and is currently actively working with over 600 museums and universities.

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