

### *Background*



Dr. Alex Wekhof started SteriBeam Systems GmbH in 2004 by incorporating his private company Wek-Tec Gbr (1993-2004).

Prior to this he worked as a Staff research scientist at the Lawrence Berkeley Laboratory, (University of California, Berkeley, Ca, 1980-1982), then at Intel Corp., Livermore, California as a senior process engineer for plasma processes. After leaving his employment in the semiconductor industry in 1985 he signed up on a contractual work with Maxwell Laboratories, Inc. San Diego, California, (1986-1988), then a leading US defense supplier of pulsed power systems and components. Staff at Maxwell Laboratories evaluated sterilization abilities of his high intensity PUV system. Positive results were followed by fund raising to start PurePulse Inc. in San Diego for food applications, and UVERG, Inc. in Berkeley, California, for environmental applications, both in 1988.

Scientific publications and press-releases of both groups created a broad following world-wide, which brought FDA in 1996 to recommend intense pulsed light for sterilization of food and packages. Yet UVERG was closed in 1993 and PurePulse was closed in 2000, both for the lack of investments and due to the unwillingness of industrial customers to pay for FDA (or EFSA) permissions (approvals) of their industrial PUV applications. *(NOTE: that is because industries are accustomed to Gamma and E-beam ISO sterilization specs, which are user-universal. The UV (and especially PUV) sterilization strongly depends on product conditions. For that reason there is no universal rule, and respectively no ISO spec, on how to use PUV- each case requires evaluation tests and piloting, then FDA (or EFSA) approval. This problem remains for SteriBeam as well, yet two our recent customers agreed to do so for PUV and PEF. The situation with approvals for the PEF sterilization is just the same).*

In 1993 Dr. Alex Wekhof relocated to Heilbronn, Germany for family and business reasons, and restarted his work under auspices of his Wek-Tec Gbr. In 2000-2001 he joined a German Government Program at the Fraunhofer Institutes in Aachen (and Freising) to experimentally prove mechanisms of pulsed light sterilization. One was his model of photo-thermal disintegration of micro-organisms, already published by the Journal of Pharmaceutical Science and Technology. The second tested for multiple damage to DNA links caused by intense PUV light. For this work Wek-Tec supplied a PUV bench-top and Dr. Wekhof participated in the evaluation of results and co-wrote the publication. This and his other publications became the basis for advanced PUV sterilization bench-top systems built by his company and sold to food, medical and pharmaceutical companies plus to academic and government organizations world-wide. In 2010 SteriBeam entered PEF business by introducing its multiple parameters bi-polar pulsing bench-top systems, which can be used for many sterilization and extraction tasks. SteriBeam also introduced a novel pulsed UVB process for the vitamin D2 enrichment in mushrooms. Both got excellent results which are accepted for publications.

### *Capabilities:*

SteriBeam Systems GmbH in partnership with state-of-the-art associate companies takes orders to design and manufacture customized Pulsed UV and PEF sterilization and nutrient extraction-enrichment systems. Our standard product line includes fully and semi-automatic bench-top PUV and PEF systems, suitable for many applications. For example, our PUV systems can perform sterilization of powders and juices, and PEF systems extract nutrients, natural colors and juices from materials such as roots, grass, and skins of vegetables and fruits.

Our facilities are located in Kehl, Germany just across from Strasbourg, France, and belongs to the same metropolitan area (Euro-District). This area is a central part of the Bio- Valley, which stretches through 3 states from Bern to Karlsruhe on both sides of Rhine and is the home to nearly 40% of the world pharmaceutical output. Our facilities are equipped with modern evaluation tools for measuring all important parameters of Pulsed UV and PEF systems.

### *Prospects:*

SteriBeam Systems GmbH grows in line with the market demand for the Pulsed UV light and Pulsed EI Fields sterilization technologies. Recently two international corporations have joined with us to implement our industrial systems for their applications. SteriBeam is often published about, e.g. see a publication about our company by Bio-Pro in Stuttgart:

<http://www.bio-pro.de/magazin/index.html?lang=en&artikelid=/artikel/04931/index.html>



R. Wagner Str. 77, D-77694 Kehl,

+sub-rented at Im Lossenfeld 2, Willstätt-Sand, D-77731.

[www.steribeam.com](http://www.steribeam.com) Tel: +49 (0) 7851 899 330 [Info@steribeam.com](mailto:Info@steribeam.com)