Alain JACQUES † Honorary Symposium:

Alain Jacques, CNRS research director at the Jean Lamour Institute, passed away on December 30, 2021.

Alain became an engineer at ESSTIN (Polytech Nancy) in 1981. After a DEA in Materials Science in Nancy, he did his PhD at the Laboratory of Physical Metallurgy and Materials Science and obtained the title of Doctor of Engineering from the 'National Polytechnique de Lorraine Institute' in June 1984.

In October of that same year, he joined CNRS as a research fellow in the 7th Section, before moving on to Section 5. Five years later, he was awarded the CNRS Bronze Medal for the quality of his research work. In 1992, he worked for a year at the Department of Materials of the University of Oxford. In 2003, he obtained his habilitation to supervise research and was promoted to be a CNRS director of research the same year.

With the integration in 2009 of the Materials Physics Laboratory into the Jean Lamour Institute, he became the head of the Physics, Mechanics and Plasticity research team, from 2011 to 2013.

Alain initiated a large-scale project for metallurgy, called "HERMeS": the construction of a high-energy synchrotron line at the ESRF (European Synchrotron Radiation Facility) in Grenoble, dedicated to in situ metallurgical studies for French and European research teams. This project should finally see light in a somewhat different form which is called DIADEM (Developing innovative, high-performance, sustainable materials from non-critical and non-toxic raw materials), funded by the 4th Investment Program for the Future of the French State.

Passionate about single crystals, Alain was an internationally recognized specialist in plasticity. He has made a major contribution to the study of inter-granular plasticity, to the oligo-cyclic fatigue of silicon and the uniaxial fatigue of single grain superalloys, with, as a common thread, a keen interest in all aspects of deformation dominated by dislocations. He was at the origin of several major technical developments for *in situ* deformation experiments at synchrotrons. At 62 years old, he had kept an intact passion for his job as a researcher, illustrated by numerous new or ongoing projects which evolved around 2 major axes:

- Characterizing the high-temperature plasticity of metallic alloys by in-situ X-ray diffraction at the synchrotron (with a priority on single-crystal superalloys and FFT modelling of the variations in the position and shape of diffraction peaks).
- Correlating the evolution of the diffraction peaks with the evolution of the microstructure, such as the density of dislocations: in other words, make the link between plasticity and diffraction.

These two aspects occupied him until the end. He was involved in the life of the DAMAS Excellence Laboratory (Design of Metal Alloys for Structural Lightening) of which he was a member of the scientific council.

Alain was an outstanding researcher. He was original in the sense that he always asked the right question. He was very frank, and his scientific discussions were sharp, enriching and passionate. He had a lively mind and was interested in all subjects. He was a free thinker, a free actor of his choices, deeply passionate. Besides his scientific qualities he was thoughtful, helpful, gracious, human, … .