

In November 16, 2012, the Institute celebrated its 60th anniversary. On that occasion the President of the Polish Academy of Sciences in a congratulatory letter wrote: "*...today, it is the Institute with important scientific and research achievements, as well as experienced and highly qualified staff. Scientific results of the Institute constitute a foundation for the designing and implementation of new technologies, beneficial for economy and friendly to the environment. They introduced the Institute to a small group of centers of world level significance, developing a wide scientific cooperation with affiliated research institutions and industry, both in the country and abroad.*"

Since the inception of the Institute, its research focused on the modern scientific problems in the field of metallurgy and materials science. Based on the over forty years of experience and scientific achievements, in September 1993 Management of the Institute decided to start preparations leading to the application of Testing Laboratories Group for accreditation. The ACCREDITATION CERTIFICATE OF TESTING LABORATORY was granted by Polish Center for Testing and

Certification (PCTC) in 1997.

Currently, the Testing Laboratories Group at the Institute of Metallurgy and Materials Science of the Polish Academy of Sciences in Krakow consists of 6 Testing Laboratories with **AC CREDITATION CERTIFICATE OF TESTING LABORATORY No AB 120 valid until 17.07.2015 given by the Polish Center for Accreditation**

. These are:

**Laboratory of Strength of Materials** carrying strength tests of structural materials

**Laboratory of Transmission Analytical Electron Microscopy**, which concentrates on the quantitative and qualitative analysis of elements in metals, alloys and ceramics using X-ray microanalysis, identification of phases, determination of local texture with the aid of electron diffraction, as well as the examination of dislocation density, shape and distribution of inclusions, structure of grain boundaries by means of bright field transmission electron microscopy, and the analysis of sizes of inclusions, domain and type of order using dark field transmission electron microscopy.

**Laboratory of X-Ray Diffraction** which specializes in the quantitative and qualitative phase analysis, analysis of crystallographic texture, measurement of residual stresses, crystallite size and lattice parameters determination of polycrystalline structural materials such as metals and alloys, metallic-nonmetallic compounds, nonmetals, geological and biological materials.

**Laboratory of Scanning Electron Microscopy** which focuses on surface morphology of a wide spectra of solid state samples using images of low-energy secondary electrons and images of high-energy back-scattered electrons, as well as on the qualitative and quantitative analysis of chemical composition within micro-areas.

**Laboratory of Calorimetry and Thermal Analysis** characterizes thermal properties and stability of materials, and kinetics of phase transitions.

**Laboratory of Spectral Chemical Analysis** specializes in the quantitative chemical analysis of homogenous solid materials.

Following audit of extension, conducted by the PCA in 2011, according to the document PCA DA 10, mentioned laboratories maintained the elastic range assigned after audit of supervision conducted in 2010 in all 15 testing methods, according to which is allowed:

- implementation of new testing methods
- modification of own testing methods
- application of updated standardized methods
- change of testing method range
- addition of new testing feature within the scope of object and method, and addition of new object within the scope of investigated feature and method.

Testing Laboratories have a possibility of placing in the research report of opinions and interpretations formulated on the basis of performed tests within the scope of accreditation.

In 2006 the Institute signed a sub license agreement with PCA for using ilac-MRA mark.

Additionally in 2013 three laboratories were appointed to Testing Laboratories Group, currently prepared to the accreditation procedure. These are:

**Laboratory of Special Microscopic Techniques** build upon methods of confocal microscopy and scanning acoustic microscopy. One of the main topics investigated with the aid of confocal microscopy is the analysis of clotting degree on materials dedicated to a new type of ventricular assist device; scanning acoustic microscope enables imaging of optically opaque interiors of objects by the examination of phenomenon occurring during high frequency acoustic waves reflection from the interfacial planes in the investigated materials.

**Laboratory of Physicochemical Tests** specializing in the

tests of physicochemical properties such as: coefficient of thermal expansion, density, surface tension, wetting angle.

**Photovoltaic Laboratory** specializing in the measurement of current-voltage characteristics of both solar cells and whole modules in Standard Test Conditions (STC).

The whole staff of Testing Laboratory Group has higher education; most of them have scientific degrees or academic titles. Due to their great experience in research, they have been authorized to perform investigations within the scope of activities of the laboratories.

The tests commissioned by the clients, are carried out on the basis of standardized testing methods outlined by the appropriate procedures and non-standardized ones developed scientifically and verified experimentally. The development of own, non-standardized testing methods is based on the results of long-term research carried out either in the IMMS PAS, or in various foreign research centers by the employees of the IMMS PAS.