



The PWI Corrosion laboratory represents the Institute on Conference «CORROSION-2010»

Manufacturing companies directly working in area of metal fund protection from corrosion took part in the exhibition: STC H.V. Karpenko PMI of the NASU, SE Engineering Center «Techno-resurs» of the NASU, SE Engineering Center «Lvovantikor» of PMI of the NASU, DE NORA DEUTCHLAND GmbH (Germany), «ZINGA METAL and K» Ltd., «Tech Engineering» Ltd., OJSC «Zaporozhie Plant of Electrical Equipment» etc. A delegation of young scientists under leadership of Prof. S.G. Polyakov presented the E.O. Paton Electric Welding Institute. Themes of presentations and poster papers of representatives of the PWI were relevant applied developments in area of monitoring of man-caused media (soils, subsoilwaters, cooling liquids) with application of electrochemical methods of investigations such as method of

polarization resistance, method of polarization curves and electrochemical noises, which are already used on enterprises of oil-and-gas complex, OJSC «Ukrghidroenergo» and municipal engineering. A development of Corrosion laboratory of the PWI took an important place in exhibition exposition. It was a system of corrosion monitoring of pipelines (SCMP) TU U 33.2-30019801-001:2006 designed for determination of level of protection of pipeline in length and in time according to DSTU 4219; rate of corrosion of pipeline metal from outside; places of protective coating damage; rate of residual corrosion of pipeline metal in a defect of protective coating; current of hydrogen diffusion through wall of pipeline metal; corrosivity of soil in places of pipeline positioning; corrosivity of product being transported; electrochemical potentials: polarization, corrosion, total with ohmic component, transverse and longitudinal gradient of potentials along the whole pipeline length as well as their change in time; presence of roaming currents.

SCMP is certified by the «Ukrmetrteststandart» of Ukraine as a mean of measuring equipment that is uncommon for such class of devices measuring instantaneous rate of metal corrosion.

The problems of terminology in area of corrosion protection, development of normative documents in this sphere which would be harmonized with international standards were discussed at final meeting of the Conference.

*Prof. S.G. Polyakov,
Ing. S.A. Osadchuk, PWI*

L.M. LOBANOV IS 70



Professor Lobanov Leonid Mikhajlovich, Dr. of Tech. Sci., academician of the NAS of Ukraine, the honoured worker of science and technology of Ukraine, laureate of Prize of the USSR Council of Ministers, State

Ukrainian Prize, Paton Prize of the NAS of Ukraine, famous scientist in the field of materials science and strength of materials and structures, celebrated his 70th anniversary in September.

Lobanov L.M. graduated from the faculty of industrial and civil building of Kiev Civil Engineering Institute and mechanical-mathematical faculty of Kiev State University. Since 1963 he is working at the E.O. Paton Electric Welding Institute of the NAS of Ukraine, since 1985 — Deputy Director on research work and Chief of Department of optimization of welded structures of new engineering at the Institute.

Scientific activity of L.M. Lobanov is connected with investigations of behavior of materials in welding, development of experimental methods of investigations and control of welding stresses and strains, fabrication of high-efficient welded structures and development of methods and means of their diagnostics.

His works, devoted to development of methods of optic modeling, holographic interferometry, electron



speckle-interferometry and shearography for investigation of stressed state and control of quality of welded joints in the structures of metallic, composite and polymer materials, were widely recognized. The developed methodological approaches and designed devices of a high accuracy and informativity are applied in research organizations and enterprises of Ukraine, CIS countries, China, South Korea.

Owing to the works of L.M. Lobanov and his pupils, the new scientific direction was formed: a deformation-free welding of structures, based on the control of thermal processes during welding to decrease heat input and create preliminary stress-strain states optimized relatively to welding stresses and deformations. The developed methods and technical means of eliminating welding deformations and stresses were used during development of complex «Energiya-Buran» and other rocket-space systems. The radically new are the developed technologies of deformation-free welding of stringer panels and shells of high-strength aluminium and titanium alloys.

Under the supervision of L.M. Lobanov the complex of fundamental investigations in the field of static and dynamic strength of welded joints considering their mechanical heterogeneity and presence of crack-like defects, resistance of welded joints to brittle and laminar fractures and also to fatigue fractures, and of scientific approaches to provide reliability and long life of welded structures keeping requirements towards the decrease of their metal capacity, methods of non-destructive control of quality and diagnostics of welded joints and structures, evaluation and extension of life of welded structures of critical purpose has been performed. New types of high-effective welded structures have been manufactured, which include the light stringer metallic structures, bridge spans, heavy-loaded structures of high-strength steels, unique structures of transformable volume. By his

active participation the State standards of Ukraine regulating requirements to the quality of welded structures and technologies of their manufacture were developed, the system of certification of welding technologies, materials, equipment and structures was organized, the conception of State program on providing technological safety for basic branches of economy of Ukraine was worked out.

L.M. Lobanov took active participation in publishing three-volume edition «Welded Engineering Structures», where the experience on study and development in the field of designing and manufacture of structures, determination of their technical condition and reconstruction was generalized.

L.M. Lobanov conducts an important scientific-organizational work as Chairman of Ukrainian technical committee on standardization in the field of welding, Deputy Chief of Interstate Scientific-Technical Council on welding and related technologies, member of Interdepartmental Council on the problems of scientific-technical security and defense of Ukraine, Deputy Chairman of scientific council on purposeful complex program of the NAS of Ukraine «Problems of life and safe service of structures, constructions and machines». He actively cooperates with international scientific organizations of CIS countries and foreign countries, often presents scientific papers at prestigious scientific forums, heads a number of international projects.

L.M. Lobanov is the author of more than 600 scientific works, including 6 monographs, 60 author's certificates and patents. He supervised the theses of 8 Dr. of Techn. Sci. and 15 Candidates of Techn. Sci.

He is awarded with orders «For services» of II and III degree and Badge of Honour, decoration of Presidium of the NAS of Ukraine «For Scientific Achievements», medal of Yu.V. Kondratyuk for participation in space activity and many other medals and decorations.