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Shipbuilding application of laser equipment and technologies

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Integrated application of laser technologies is a way to increase shipbuilding production quality. Shipbuilding and Shiprepair Technology Center is a leading design and engineering center in Russian shipbuilding sector. SSTC has a wide range of laser equipment and takes an active part in development and application of laser technologies for shipbuilding. Over 40 years SSTC develops and supplies shipbuilding industry with gantry thermal cutting machines. The latest project is the laser cutting machine based on fiber lasers with power from 1 to 3.5 kW. The gantry laser cutting complexes "RITM" characterized by high reliability and ease of maintenance have shown themselves to advantage at Russian shipbuilding and engineering enterprises. There are several robotized complexes among the advanced development for laser welding of heat-exchangers and welding in hard-to-reach places was designed. SSTC also developed flat sections manufacturing technology based on application of laser technologies. The sample of automated welding and assembly line for sections up to 12 meters by 12 size using flow positional method and other technological solutions never applied before in world shipbuilding industry was created. Approval of Russian Maritime Register of Shipping for typical hybrid laser-arc welding process of plates and profiles of ship's hull structures with laser cut groove preparation was obtained. Development and application of laser technologies allows achieving new level of productivity and production of structures in shipbuilding and mechanical engineering.

Biography

Nikolay A Nosyrev has graduated from Baltic State Technical University «VOENMEH» named after D.F. Ustinov with a degree in laser technologies. He is the process engineer of laser technologies in shipbuilding laboratory, JSC "Shipbuilding and Shiprepair Technology Centre". He takes an active part in research and development of hybrid laser-arc welding technologies for ship's hulls production. At present he is working on the dissertation for a candidate of sciences degree. He has presented a number of articles and reports in reputed journals and international conferences.

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