Personal Details

Oleksii Zahorodnii
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Education

Prydniprovska State Academy of Civil Engineering and Architecture (PSACEA), Dnipro, Faculty of Mechanical Engineering specializing in Lifting and Transport Machinery, Construction, Road Machinery, and Equipment.

The Main Directions of Scientific Activities

- Development of new composite materials for plasma spraying of parts for gas turbine engine;
- Development of technologies for coating application for various purposes using plasma spraying method.

Employment History

- 1998 – Graduated from the Prydniprovska State Academy of Civil Engineering and Architecture with a specialization in «Lifting and Transport Machinery, Construction, Road Machinery, and Equipment». Based on the academic performance and successful defense of the thesis, received a recommendation for admission to the postgraduate program;
- Since 1999 - Assistant Professor at the Department of Materials Science and Processing;
- Since 2018 - Senior Lecturer at the Department of Materials Science and Processing.

Research

Current research

Application of physical and mathematical methods for the analysis of multicomponent systems «Research on the structure and properties, prediction of qualitative characteristics, and development of gas-thermal coatings for structural materials» (№ ДР 011U006483); «Materials Science Fundamentals for Enhancing the Operational Properties of Structural Materials».

Previous Research

Research study «Analysis of the composition of coating additives for gas turbine engines» (2019-2020);

Commercial and contractual work «Development of thermal protection coating (ТЗП 1700) for the working surface of heat pipes and nozzle devices of gas turbine engines»;

Research study according to contract № 53 /18-НИО «Development of a reinforced ceramic matrix composite for components in the hot section of a gas turbine engine».

Expertise Summary

Development of new composite materials for plasma spraying of parts for gas turbine engine;
Development of technologies for coating application for various purposes using plasma spraying method.

Publications

1. Volodymir Bolshakov, Mykola Kotov, Illia Iliev, Oleksiy Zagorodniy Application of Expert and Fractal Assessments for Predicting the Quality of Structural Steel. Metal Science and Heat Treatment of Metals, 2022 https://scholar.google.com.ua/citations?view_op=view_citation&hl=ru&user=bC-AwwYAAAAJ&citation_for_view=bC-AwwYAAAAJ:ULOm3_A8WrAC

2. Lilia Krivchik, Tatiana Khokhlova, Victoria Pinchuk, Artem Holovachov, Grigory Srebryansky, Victor Nosenko, Oleksiy Zagorodniy Strengthening of Pipe Tools for Cold Roller Rolling of Corrosion-Resistant Pipes by Application of Amorphous Alloys National Scientific Center 'Kharkiv Institute of Physics and Technology' 2021. https://scholar.google.com.ua/citations?view_op=view_citation&hl=ru&user=bC-AwwYAAAAJ&citation_for_view=bC-AwwYAAAAJ:UebtZRa9Y70C
3. Fedor Vashkevich, Dmytro Laukhin, Mykhailo Spilnyk, Vladimir Zhuravel, Oleksiy Zagorodniy Researh of Influence of Technological Factors of Formation of Plasma Coatings on their Thermal Technical Properties Key Engineering Materials, p. 188-193 2020 https://scholar.google.com.ua/citations?view_op=view_citation&hl=ru&user=bC-AwwYAAAAJ&citation_for_view=bC-AwwYAAAAJ:0EnyYjriUFMC
4. F.F. Vashkevych, A.Ya. Spilnyk, O.B. Zahorodniy, V.I. Zhuravel, A.V. Liasota The Influence of Reinforcement on the Thermal Properties of Ceramic Coatings Bulletin of Prydniprovs'ka State Academy of Civil Engineering and Architecture. №2. P.42-47 2019 https://scholar.google.com.ua/citations?view_op=view_citation&hl=ru&user=bC-AwwYAAAAJ&citation_for_view=bC-AwwYAAAAJ:YOwf2qJgpHMC
5. Oleksiy Zagorodniy Developing an approach to increasing cohesive strength durability for details of a compressor for a gas turbine engine Metal Science and Heat Treatment of Metals, №4 P. 47-53, 2018. https://scholar.google.com.ua/citations?view_op=view_citation&hl=ru&user=bC-AwwYAAAAJ&citation_for_view=bC-AwwYAAAAJ:hqOjcs7Dif8C

Courses

1. **Interchangeability, standardization and technical measurements.**
The discipline is devoted to studying of machine parts connections, solving problems of interchangeability, adhering to the modern direction, connected with the principle of functional interchangeability and the use of relevant domestic and foreign works, as well as developments of the department. The main tasks of studying the discipline are mastering the theoretical foundations of interchangeability, standardization and metrology and acquiring practical skills in the methods of studying standardization, calculations of interchangeability, technical measurements.

2. **Educational practicum in Materials Science.**
   The discipline is devoted to practical appliance of the skills acquired during the study of disciplines and the completion of educational practice. Namely, the development of the technology of parts manufacturing.

3. **Educational practice.**
   The purpose of educational practicum is to form students basic engineering and technical knowledge about modern technologies and equipment for wielding materials, as well as types of modern metal cutting machines and the work performed on them. Main tasks of the educational practice are to acquisition practical skills in wielding work and work performed on metal cutting machines.