

|                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| University                                                                                                                                                             | National University of Science and Technology MISIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| English proficiency                                                                                                                                                    | A2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Postgraduate program                                                                                                                                                   | 22.06.01 Materials technology<br>Specialization: metal science and heat treatment of steels and alloys                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| List of research projects                                                                                                                                              | Investigation of the cooperative interaction of structures of different scales during the destruction of structural materials<br>Study of morphology, fractures and quantitative analysis of the geometric characteristics of the structure of heterogeneous structures of welded joints, which determine the level of brittle strength of the weld metal of the reactor pressure vessel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| List of possible research topics                                                                                                                                       | 1) Fractographic studies using computerized quantitative procedures<br>2) Influence of structures parameters on the properties of metal products based on their quantitative analysis<br>3) Analysis of big data arrays of production control of metal products                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|  <p>Research supervisor:<br/>Elina A. Sokolovskaya,<br/>Candidate of Science/PhD</p> | Metal science and heat treatment of steels and alloys                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                                                                                                                                        | <u>Supervisor's research interests:</u><br>Quality management of structural materials; big data (data minig) of production control; computerized control of structures and fractures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                        | Research highlights<br><br>1) The program provides for the acquisition of practical skills in working on modern experimental equipment.<br>2) The opportunity to take part in joint projects with the participation of leading Russian scientists.<br>3) Develop of procedures for quantitative processing of structures and fractures based on their images<br>4) Acquire skills in processing large data arrays, taking into account the physics and chemistry of the phenomenon                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                        | Supervisor's specific requirements:<br><ul style="list-style-type: none"> <li>• The ability to use common programs Excel, Photoshop</li> <li>• Knowledge of the basic course of physics, chemistry, materials science, statistical.</li> <li>• To know and be able to apply the basic methods quality control of materials</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                                                                                                                                        | Supervisor's main publications: <i>13 publications</i> <ul style="list-style-type: none"> <li>• On necessity of taking into account statistical nature of the objects using Big Data in metallurgy // CIS Iron and Steel Review.–2022.–V. 23.–N. 1.–P.105-112</li> <li>• Scales of the Heterogeneity of Structural Materials and Methods of Its Estimation // Russian Metallurgy (Metally), 2022, 2022(6), стр. 603–610</li> <li>• Digitization Possibilities for Steel Quality Control Using the Structure of Fracture //Russian Metallurgy (Metally), 2021, 2021(12), стр. 1619–1624</li> <li>• On Taking into Account the Statistical Nature of Objects in Structural Analysis in Metals Science // Russian Metallurgy (Metally), 2020, 2020(12), стр. 1435–1438</li> <li>• Measurement of Banded Microstructure Characteristics in Sheet Steels // Metallurgist, 2019, 62(11-12), стр. 1225–1231</li> </ul> |

|  |                                                                                                                                                                                                                                                                                       |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Results of intellectual activity</p> <ol style="list-style-type: none"> <li>1. Коллектив. Патент на изобретение RU 2637734, заяв. 29.12.2016, опубл. 06.12.2017. Бюл. № 34</li> <li>2. Коллектив. Патент на изобретение RU 2668691, заяв. 27.12.2017, опубл. 02.11.2018</li> </ol> |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|