


University	Peter the Great St. Petersburg Polytechnic University
Level of English proficiency	Advanced (C1)
Educational program and field of the educational program for which the applicant will be accepted	<p>URBANISM & CIVIL ENGINEERING</p> <p>1.6.21. Environmental Engineering</p> <p>2.1 Construction and Architecture</p> <p>2.1.1. Building Structures and Constructions</p> <p>2.1.2. Foundations and Footings, Underground Constructions</p> <p>2.1.5. Building Materials and Products</p> <p>2.1.8. Design and Construction of Roads, Metros, Airports, Bridges, and Transport Tunnels</p> <p>2.1.6. Hydraulic Engineering</p> <p>EARTH & ENVIRONMENTAL SCIENCES FOR SUSTAINABILITY</p> <p>1.6.21. Environmental Engineering</p>
List of research projects of the potential supervisor (participation/leadership)	<p>Supervisor, grant of the Russian Science Foundation No 21-19-00324. Fundamental scientific research of new concretes with ash gravel with transition to environmentally friendly and resource-saving energy and deep coal processing.</p> <p>Supervisor, grant of the Ministry of Education and Science of the Russian Federation No 075-15-2021-590. Self-healing construction materials.</p>
List of the topics offered for the prospective scientific research	<ol style="list-style-type: none"> 1. Energy efficient buildings, aerogel, phase change materials, multi-skin facades, adaptive facades. 2. Modular construction, prefab technologies. 3. Auxetic metamaterials, honeycomb structures, sandwich structures. 4. Geopolymer concrete, geopolymer foam concrete, geopolymer with industrial waste. 5. Construction materials and products with industrial waste. 6. Geotechnics, piles, soil stabilization. Roads and railways embankments. Roads, railway, and airfield subgrade. 7. Computational fluid dynamics (CFD), multiphase flows, flow in porous media.
 <p>Research supervisor: Nikolay Ivanovich Vatin, Doctor of Engineering Sciences, Professor</p>	<i>2.01. Civil engineering</i>
	Supervisor's research interests Mechanics of materials, structural mechanics, fluid mechanics, soil mechanics, engineering and construction systems/
	Research highlights: Use of unique equipment, collaboration with international research centers, and grant support for graduate students.
	Supervisor's specific requirements for a postgraduate student: 1. English Proficiency must meet one of the following criteria: - Obtain a TOEFL score of at least 75. - Attain an IELTS score of at least 5.5. - Possess a university degree earned while studying in an English-speaking country or while studying in the English language. 2. Research Background - Participation in research projects. - Publication of academic articles.

<p>(scientific degree received from Peter the Great St. Petersburg Polytechnic University)</p>	
	<p>Supervisor's main publications</p> <p>The 5-year number of Scopus-indexed research articles and review articles is 203. This includes 72 articles in Q1-level sources according to the SJR metric.</p> <p>The H-index according to Scopus is 40, and the H-index according to Web of Science is 28.</p> <p>Scientific identifiers: Scopus ID 6508103761; Orcid 0000-0002-1196-8004; Researcher ID O-6995-2019.</p> <p>A list of publications is available at https://www.researchgate.net/profile/Nikolai-Vatin</p> <p style="text-align: center;">Supervisor's last main publications</p> <p>Murali G., Abid S.R., Al-Lami K., Vatin N.I., Dixit S., Fediuk R. Pure and mixed-mode (I/III) fracture toughness of preplaced aggregate fibrous concrete and slurry infiltrated fibre concrete and hybrid combination comprising nano carbon tubes (2023) Construction and Building Materials, 362, art. no. 129696 DOI: 10.1016/j.conbuildmat.2022.129696</p> <p>Klyuev A., Kashapov N., Klyuev S., Ageeva M., Fomina E., Sabitov L., Nedoseko I., Vatin N.I., Kozlov P., Vavrenyuk S. Alkali-activated binders based on technogenic fibrous waste (2023) Case Studies in Construction Materials, 18, art. no. e02202 DOI: 10.1016/j.cscm.2023.e02202</p> <p>Prithiviraj C., Swaminathan P., Kumar D.R., Murali G., Vatin N.I. Fresh and Hardened Properties of Self-Compacting Concrete Comprising a Copper Slag (2022) Buildings, 12 (7), art. no. 965 DOI: 10.3390/buildings12070965</p> <p>Chang Q., Zhao C., Xing L., Ahmad W., Javed M.F., Aslam F., Musarat M.A., Vatin N.I. Concrete filled double steel tube columns incorporating UPVC pipes under uniaxial compressive load at ambient and elevated temperature (2022) Case Studies in Construction Materials, 16, art. no. e00907 DOI: 10.1016/j.cscm.2022.e00907</p> <p>Ibragimov R., Bogdanov R., Miftakhutdinova L., Fediuk R., Vatin N.I., de Azevedo A.R.G. Effect of polydisperse reinforcement on the fresh and physical-mechanical properties of self-compacting concrete</p>

	(2022) Case Studies in Construction Materials, 17, art. no. e01188 DOI: 10.1016/j.cscm.2022.e01188
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