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Titolo	Improving road pavement characteristics : applications of industrial waste and finite element modelling / / Alexander A. Lyapin [and five others]
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ISBN	3-030-59230-8
Edizione	[1st ed. 2021.]
Descrizione fisica	1 online resource (XV, 236 p. 160 illus., 103 illus. in color.)
Collana	Innovation and discovery in Russian science and engineering
Disciplina	625.8
Soggetti	Waste products as road materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Preface -- Problems of using technogenic raw materials -- Main areas of utilizing the burnt rocks of mine dumps and ash slag waste -- Ways of improving the structural properties of burnt rocks of mine dumps and ashes slag waste -- Composition and properties of the burnt rocks of mine dumps and ash slag waste -- Features of using the burnt rocks of mine dumps and ash slag waste in road constructions -- Physico-mechanical and chemical methods of hardening the burnt rocks of mine dumps and ash slag waste in road pavements -- On the efficiency of using the burnt rocks of mine dumps and ash slag waste in road constructions -- Dynamic modeling of solid mass on soil base -- Studying characteristics of waves propagating in layered structure with semi-infinite layers -- Modeling pavement constructions -- Modeling the behavior of porous elastic water-saturated media -- Conclusions.
Sommario/riassunto	The book presents original technologies developed by the authors and existing Russian experience in study and application of technogenic raw materials (such as burnt rocks of mine dumps and ash-slag waste) to R&D of road constructions with high-strength properties and long-life operation. Another direction of the book is connected with finite-element modeling pavement constructions on different soils. To this aim, corresponding theoretical solutions and numerical algorithms are realized in ANSYS software. The obtained numerical results are compared with existing experimental data for real road constituents. It

presents particular results of the Russian schools of Mechanics and Material Sciences not previously available outside of Russia. Explains original theoretical and experimental methods developed for solution of the problems of effective using technogenic waste in building and road constructions; Facilitates improvement and optimization of theoretical and numerical approaches for R&D of road pavements on different soils; Describes new promising building materials based on easily accessible waste able effectively to replace conventional materials and supported by Russian patents.