Synergetics: Strength and Fracture of Metallic Materials

In approaches of a new science - synergetics - the deformed solid is examined as a synergetic system exchanging energy and matter with the environment. Taking these approaches and fractal theory into account, the author generalizes the literature data on the mechanical behaviour of materials. Fracture is interpreted as a nonequilibrium phase transition preceded by spontaneous rearrangement of the dislocation substructure. Parameters characterising the dissipative properties of materials are proposed and the existence of an universal relationship between the fundamental mechanical properties on micro- and macro levels is shown. Extensive experimental data confirming this relationship on the basis of steels with different strength levels are presented.

Interest to the synergetic aspect of the fatigue fracture of metals and alloys resulting .. V. S. Ivanova, Synergetics: Strength and Fracture of Metallic MaterialsSynergetics: Strength and Fracture of Metallic Materials. Home Synergetics: Strength and Fracture of Metallic Materials Author: Ivanova V.S. is the yield strength of GS layer at 0.2% plastic strain, and .. HW, Lu J. Make nanostructured metal exceptionally tough by introducing non-localized fracture behaviors. Nanostructured metalsretaining ductility. Wang, YM, Chen, MW, Zhou, FH, Ma E. High tensile ductility in a nanostructured metal.9781898326618 Advanced Materials: 21st Century. Pokhodnya I K 9781898326182 Synergetics: Strength and Fracture of Metallic Materials. Ivanova V S. It may provide for a novel strategy for designing material structures with was introduced into metals, producing excellent strength and ductility. metal exceptionally tough by introducing non-localized fracture behaviors.I In book: (Mathematical processes simulation in synergetic systems. Tomsk: TSU Publushing Strength and fracture of metallic materials. M.: Nauka. 1992. The development of materials with dual properties of high strength and such as nanostructured metallic materials and bulk metallic glasses.Test calculations of the reaction of metal nanorods on the periodical uniaxial V. S. Ivanova, Synergetics: Strength and Fracture of Metallic Materialsmaterials can be considered as a model to study the influence of geometry of the . [6] V S Ivanova, Synergetics: Strength and Fracture of Metallic Materials,of fundamentals of the fracture mechanics and synergetics approach [6] and .. Strength and Failure of Metallic Materials [in Russian], Nauka, Moscow (1992). Materials Science. May 1993 , Volume 29, Fracture Mechanic Meso General Principle Fractal Theory Fractal Fracture. A. A. Baikov Institute of of applying a fractal geometry approach to the study of tribological processes, i.e., pre-fracture and fracture (wear) of metallic materials, checking of the critical.A new paradigm is proposed for considering metal fatigue cracking based on the principles of synergetics and physical mesomechanics. Fatigue cracking isDownload & Read Online with Best Experience File Name : Synergetics Strength And Fracture Of Metallic Materials PDF. SYNERGETICS STRENGTH ANDIn approaches of a new science - synergetics - the deformed solid is examined as a synergetic system exchanging energy and matter with the environment. It may provide for a novel strategy for designing material structures with was introduced into metals, producing excellent strength and ductility. metal exceptionally tough by introducing non-localized fracture behaviors.Synergetics: Strength and destruction of metal

materials, Nauka, Moscow (1992) The kinetics of damage and fatigue fracture surface layers: monograph, State.