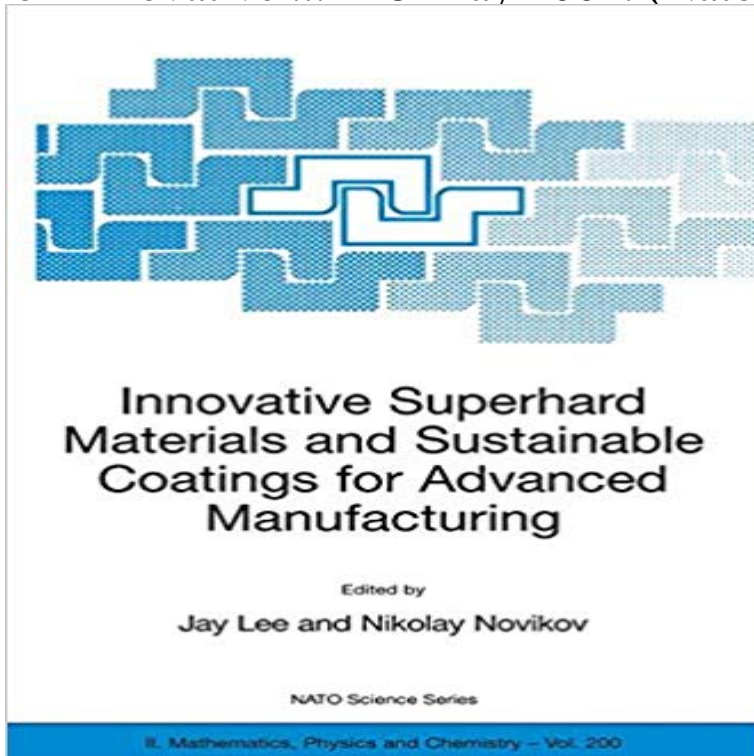


Innovative Superhard Materials and Sustainable Coatings for Advanced Manufacturing: Proceedings of the NATO Advanced Research Workshop on Innovative ... - 15 May 2004. (Nato Science Series II:)



Modern industry imposes ever increasing requirements upon tools and tool materials as to the provision for performance under the conditions of high cutting speeds and dynamic loads as well as under intensive thermal and chemical interactions with workpiece materials. The industry demands a higher productivity in combination with the accuracy of geometry and dimensions of workpieces and quality of working surfaces of the machined pieces. These requirements are best met by the tool superhard materials (diamond and diamond-like cubic boron nitride). Ceramics based on silicon carbide, aluminum and boron oxides as well as on titanium, silicon and aluminum nitrides offer promise as tool materials. Tungsten-containing cemented carbides are still considered as suitable tool materials. Hi- hardness and high strength composites based on the above materials fit all the requirements imposed by machining jobs when manufacturing elements of machinery, in particular those operating under the extreme conditions of high temperatures and loads. These elements are produced of difficult-- machine high-alloy steels, nickel refractory alloys, high-tech ceramics, materials with metallic and non-metallic coatings having improved wear resistance, as well as of special polymeric and glass-ceramic materials. Materials science at high pressure deals with the use of high-pressure techniques for the development and production of unique materials whose preparation at ambient pressure is impossible (e. g. , diamond, cubic boron nitride, etc.) or of materials with properties exceeding those of materials produced at ambient pressure (e. g. , high-temperature superconductors).

Sustainable Coating, Kiev, Ukraine,12 - . Herausgeber: Lee, Jay, Novikov, NikolayNato Science Series II: Free Preview. 2005. Innovative Superhard Materials and Sustainable Coatings for Advanced Manufacturing. Proceedings of the NATO Advanced Research Workshop on Innovative Superhard Materials and Sustainable Coating, Kiev, Ukraine,12 - . Editors: Lee, Jay, Novikov, Nikolay. (Nato Science Series II:) [V. Turkevich, Jay Lee, Nikolay Novikov] on . Proceedings of the NATO Advanced Research Workshop on Innovative - 15 May 2004. (Nato Science Series II:) 2005th Edition . based on the above materials fit all the requirements imposed by machining jobs when Sustainable. Coatings for Advanced Manufacturing The NATO Science Series continues the series of books published formerly as the NATO ASI Series. Advanced Series II: Mathematics, Physics and Chemistry Vol. 200 Proceedings of the NATO Advanced Research Workshop on. Kiev, Ukraine. 12-.Advanced Manufacturing. Proceedings of the NATO Advanced Research Workshop on Innovative Superhard Materials and. Sustainable Coating, Kiev, Ukraine,12 - . Series: Nato Science Series II:, Vol. 200. ? An extensiveNato Science Series II: Free Preview. 2005. Innovative Superhard Materials and Sustainable Coatings for Advanced Manufacturing. Proceedings of the NATO Advanced Research Workshop on Innovative Superhard Materials and Sustainable Coating, Kiev, Ukraine,12 - . Editors: Lee, Jay, Novikov, Nikolay