

The invention of nano-scale laser cleaner

[Science](#), [Computer Science](#)



The intermingling of globalization and industrialization provided high tech living to modern century using advanced digitalization. Currently, physical working is trending to keep far distance from educated society due to the entrance of upgraded and high tech mechanism into human world. The use of this modern informational technology is performing several micro or mini project without any interruption or high labour cost. In addition, the introduction of laser technology has shaken the trend modern business personalities. This technology has enough potentiality to met the market demand in this fast changing scenario. In this context, the use of polymeric material is also reaching peak day by day.

There are in numeral products covering current professional and personal field made up of polymeric material. The cleaning of surface of several polymeric materials or products requires scrutinize cleaning. However, laser cleaning is bets solution to this problem. The entrance of nano-scale laser cleaner is nothing but generated the satisfactory relaxation to the manufacturer and user of polymeric materials or products. The prime aim or objective of this literature review is only to present the use of nano-scale laser cleaner in cleaning the polymeric materials or products.

Key Feature of laser cleaning

The prime key feature of laser cleaner is essential to determine importance and significance of this modern and upgraded IT supported machine. In this context, the renowned scholars (Marczak, 2008) commented that this process does not require use of agents or solvents like conventional or traditional method of cleaning. The versatility and systematic combining power or capacity is uplifting the pace of cleaning process in this modern

business era. The expenditure of this system is mostly affordable for common business personalities. The laser beams adopting the high energy generates ray, which has enough potentiality to remove or destroy the unwanted particles from surface or other outer space of an object in order to make it clean like the new products.

Positive uses of laser cleaning

According to (Watkins, 2003), laser cleaning has several positive impacts on modern civilization, as it is very easy to operate with its automated operating system. On the other hand, high consistency and precision is there to satisfy the demand beyond the imagination of service provider as well as service users. However, this laser cleaning is best suitable for metal coating on surfaces of various objects. The surprising benefits of using this laser cleaning process is that it never produces any kind of dust, media or chemicals in time of cleaning up process. Therefore, (Klemm, n. d.), suggested that adopting this system is now facilitating in several aspect to the business organization providing ultramodern service in low cost.

Negative impact of laser cleaning

In accordance with the remark of (Badida, 2016), the negative impacts of this laser cleaning process is fading away due to the gathering of huge positive impacts on several sections of modern living. However, the first and foremost negative impact of this advanced system is putting on environment as it is gradually damaging the delicate surface of environment due to abrasive blasting at the processing time. Therefore, another negative impact is that the introduction of this laser cleaning system is reducing the scope of

employment in huge rate. The UV laser radiation is also has ill impact of human body.

Types of laser cleaning

Modern laser cleaning machine is based on three different types like large scale cleaner, macro scale cleaner and micro or nano scale cleaner. The objective of this different application is to clean surface using the thumb rule. From the viewpoints of (Genna, 2018), the differentiate is basically based on functional area or objects to clean with the machine. In this context, at the very beginning of this introduction of this machine or technology, users trend to buy large-scale products or object. Later, the necessity converts in to macro then nano or micro scaling. The reason behind this conversion of demand is nothing but the increasing rate of using polymeric objects in the market. The demand of this laser-cleaning machine is high in international context.

Key concept of Nano-scale laser cleaner

Consequently, in providing the key concept of nano-scale laser, it is to be mentioned that the famous scholar (Chung, 2005) commented that the modern electronic industry is tending to use this technology in soldering or welding of pads or connectors, plugs and others. This laser can easily strip insulation in 1 - μ m silver or tin with anti corrosion layer. Therefore, this system allows to cut windows and to cut thin parts in to flat wires and printing over several circuits. The investment expenditure of this system is quiet high from other laser systems as it provides high-speed service depending on second range.

Usefulness of nano-scale laser cleaner

In accordance with the viewpoints of (Hwang, 2009), nano-scale laser cleaner is developed only to clean tiny objects with small footprints or surface area. In this context, the first and best usefulness of this nano-scale laser cleaner is in cleaning non-linear surface extension in order to paving way towards integrated and nano-photonics circuitry. Use of chip optical computing is generally spacing the professionals to use and invent more and more nano-scaling object eradicating the fare of cleaning problems in future. This technology is also bets in cleaning microscopic 3D objects in room temperature with eth help of plasmonic, coaxial nano-scaling structural technology.

Demerits of using nano-scale laser cleaner

According to (Saeed, 2017), in describing the demerits of nano-scale laser cleaner, the first and foremost facts coming in the way is the scrutinize use of this application. Any little mistake or inefficiency will lead to vast destruction or damage. In this context, the use of this technology requires expertise of workers in providing perfection to the task. The nano-scale laser cleaning seeks high expenditure to provide service including energy consumption and high quality of raw materials.

Description of polymeric material

As noted by the popular modern critic (Šišáková, 2010), polymeric material is conventionally determined as plastics. This is nothing but the combination of huge basic chemical units or monomer molecules and polymers. In this context, the polymeric materials are consisting of three different categories like thermoplastics, elastomers and thermo sets. The advantages of using

this polymeric material are that it is easy in processing as it has high ductility and thermal insulators and electric insulators. On the other hand, the applications of this polymeric material are that the products are mainly used for packaging, automobiles and aerospace constructions in coating wires and to invent bins, tubes, boxes and pneumatics plastics.

Laser cleaning of polymeric material with nano-scale laser

According to (Correa, 2012), the use of polymeric materials is now grabbed the modern era in every section. Radical increase in population is forcing the business organizations to use polymeric material to satisfy the demand market within short span of time and with more stylish out looked products. The introduction of leaser cleaner is nothing but the enthusiastic step to enhance the confidence level of manufacturer to produce products in using organic or inorganic polymeric material in order to increase their business area and profit percentages. On the other hand, the scholar critics (Menges, 2012) stated that the increasing use of polymeric objects are pushing the generation to be contacted with several unknown skin disease for internal infection in food related products.

Summary

The relation of nano-scale laser clear and polymeric material is now become the inevitable one in order to meet the market demand and integration of professional field. However, it reviewed, examined and reported in recent period on this particular work completed already by experts and published in genuine journals and seminar records, as augmented by (). The use of high tech objects always requires proper maintenance and servicing. This is the reason to interrelate these two objects under same chain.

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