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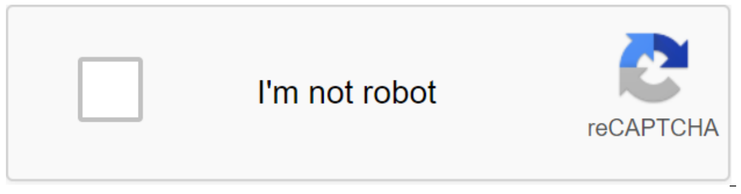

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Anoop Jain ist bei Facebook. Um dich mit anoop zu verbinden, trit Facebook noch heute bei. Anoop Jain ist bei Facebook. Um dich mit anoop zu verbinden, trit Facebook noch heute bei. Weitere Personen calls Anoop Jain anzeigen (Mark Brake Photo/Getty Images) What new engineering disciplines will be created in the next 100 years? Originally appeared on the square: a place to gain and share knowledge, empower people to learn from others and better understand the world. Thomas Ulrich, a graduate student in electrical engineering at Stanford University, asked about The Square: It may be a bit of a disappointment, but I think engineers will spend the next 100 years largely ignoring new discoveries in fundamental physics. I can say this because we already know quite a lot about the physical laws that apply to everyday conditions. Maxwell's equations, Newton's law of gravity, quantum mechanics, and special and general relativity were incredibly thoroughly tested. We can say with great confidence that they (along with a lot of approximation and thumb rules, of course) are doing a great job of predicting phenomena in literally all environments engineers care about. As much as engineers love to talk about black holes and neutron stars, we also recognize that they will have no practical application for the foreseeable future. We don't need quantum gravity theory to design computers, rockets, or even thermonuclear reactors. However, there is a huge amount of opportunity to discover new almost relevant phenomena that arise from existing physical laws. We don't recognize the electron, but we'll find new ways to use electrons in computers. We won't open the atom, but we'll use atoms to create new materials. Here are a few specific areas where I think physical discoveries will open up new perspectives in technology in the next 50-100 years. Applied quantum mechanics will continue to grow in the near future, which may lead to one or more brand new engineering disciplines. We already have several degree programs with titles like Engineering Physics, but it's a pretty broad label. Maybe something like quantum engineering would be appropriate (it also sounds great). Engineers in this field could work on chips, quantum computers, cryptography and nanotechnology, among others. Nuclear fusion is likely to become a viable source of energy sometime in the next few decades. However, while this development widely welcomed, engineers will respond more cautiously than most of the public. Thermonuclear reactors will not be profitable for many years due to the extremely high cost of the reactor and the reduced cost of alternatives such as solar power. When commercial commercial reactors are finally beginning to come into operation, they will be developed by physicists working with nuclear engineers, electrical engineers and other specialists from existing engineering disciplines. The discovery of new high-temperature superconductors, topological insulators and 2D materials will radically change many under the fields in the fields of materials science, electrical engineering and chemical engineering. At the moment, the consequences of this are difficult to foresee. Again, however, I doubt that a new field of technology will be created. We will find new ways to use energy particles to treat cancer and other diseases. But these treatments will be developed by biomedical, electrical and chemical engineers. Again, a new area of technology will not be required. Genetic engineering will grow dramatically in importance in the next 100 years, maybe even become an independent area. However, I expect that the most important discoveries that make this possible will occur in chemistry, not physics. The quantum computers will require computer scientists to develop entirely new ways of thinking about programming, which is likely to lead to a whole new sub-drink within the self-replicating CS machines. The self-replicating mechanism can have the same effect on industrial and mechanical engineering. Here are some more speculative thoughts as well. Most of them will be wildly wrong, but that's part of the fun of making predictions. What if someone finds the best way to make antimatter? It is unlikely that we will ever drive cars with antimatter, but antimatter will be incredibly useful for spaceships... And guns. If I had to guess, I would have predicted that the solution would be a huge accelerator of electrostatic particles, breaking protons or heavy ions into metal targets in a space vacuum. Spacecraft can also use new nuclear propulsion systems. Figuring out how to build a practical fission fragment or thermonuclear rocket engine would be extremely useful for the study of the solar system and even other stars. My wild guess on this one is that the best design is a fragment splitting rocket powered by dusty plasma including americium or californium nanoparticles. There may be ways to apply physics to optimize biological processes such as photosynthesis and protein production. Engineers could be imagined using such discoveries to increase the production of food and medicine using genetic engineering. New discoveries in quantum mechanics can allow exceptionally dense energy storage or ultra-powerful lasers, any of which can have some interesting effects. A true 3D display in the air would be really cool. Maybe physics would contribute by developing the best femtosecond lasers. The ultimate goal will be a system of something like this. And of course, despite what I said earlier, it's not entirely inconceivable that we'll see some now unimaginable new that will upend all the engineering. For example, what if someone finds out how to extract energy from a vacuum somehow? (There are many good reasons to think that this is impossible, but it can be argued that it is not completely prohibited by the now known laws of physics.) You have to be careful against human ingenuity. With all that said, I think the biggest changes in technology in the next 100 years will have little to do with physics. There is a very strong overall trend in engineering towards automation and the use of ever higher levels of abstractions. I see no reason for that to change. Future engineers will have access to highly automated intelligent design tools that we can only dream of today. They will need to have a deep understanding of programming, software development and data science. In turn, even small teams will be able to develop and test new ideas at an incredible rate, sometimes going directly into mass production without even making a physical prototype. It will be very interesting to see what new technology this makes possible. This question originally appeared on the square - a place to gain and share knowledge, empower people to learn from others and better understand the world. You can follow the messages on Twitter, Facebook and Google. Other questions: questions: engineering physics book by gaur and gupta pdf download quora