



UNIVERSIDADE FEDERAL DE GOIÁS
INSTITUTO DE FÍSICA

DECLARAÇÃO

Disciplina: **Introduction to Nanoscience and Nanotechnology**

Código: **IFI10351**

Unidade: **Instituto de Física**

CHT: **32h**

Núcleo: **Livre**

Ementa

History of nanoscience and nanotechnology, Types of microscopy, Nanostructures (0D, 1D, 2D, 3D), Nanotechnology and information, Nanotechnology and environment, Nanotechnology and energy, Nanotechnology and health.

Conteúdo Programático

1. Introduction to nanoscience and nanotechnology: History
2. Microscopy: Tunnel effect and STM; Van der Waals interaction and AFM
3. Nanostructures (0D, 1D, 2D, 3D): Carbon, gold, iron oxide, among others
4. Nanotechnology and information: Moore's law and Kridler's law
5. Nanotechnology and environment remediation
6. Nanotechnology and energy: Nanophotonics
7. Nanomedicine and health: Drug delivery and nanotheranostics

Bibliografia Básica

1. HANS-ECKHARDT SCHAEFER, Nanoscience: The Science of the small in physics, engineering, chemistry, biology and medicine, Springer, Berlim 2010.
2. KEWAL K. JAIN, The handbook of Nanomedicina, Humana press (Springer business), New Jersey, 2010
3. WILFRIED ANDRA, HANNES NOWAK, Magnetism in Medicine, Wiley-VCH Verlag GmbH, Weinheim, 2007.
4. Articles from the literature published in high impact journals (Nature, Science, Nature Nanotechnology, among others).
5. YouTube videos.
6. TED talks, among others.



Documento assinado eletronicamente por **Rodrigo Massanori Vilela Utino, Secretário**, em 10/03/2023, às 11:56, conforme horário oficial de Brasília, com fundamento no § 3º do art. 4º do [Decreto nº 10.543, de 13 de novembro de 2020](#).



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