Energy-Converting Biomaterials and Nanomedicine

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Energy conversion occurs in every seconds of human daily life, which also promotes the evolution and development of the whole society. Such an energy-conversion phenomenon has also played the significant role in clinic biomedicine. Especially, the emerging of versatile biomaterials and advanced nanomedicine provides some intriguing approaches to solve the critical issues of energy conversion-based disease diagnosis and therapy. This presentation will introduce some significant progresses in "energy-converting biomaterials" and "energy-converting nanomedicine" by discussing the unique functionality of biomaterials for satisfying the strict "energy-converting" biomedical applications. These biomaterials exert their specific functionalities in energy-converting nanomedicine, including photo-based, radiation-based, ultrasound-based, magnetic field-based, microwave-based, electric field-based and radiofrequency-based nanomedicines. Furthermore, the current challenges and future developments of this emerging "energy-converting nanomedicine" for further clinical translation will be discussed.

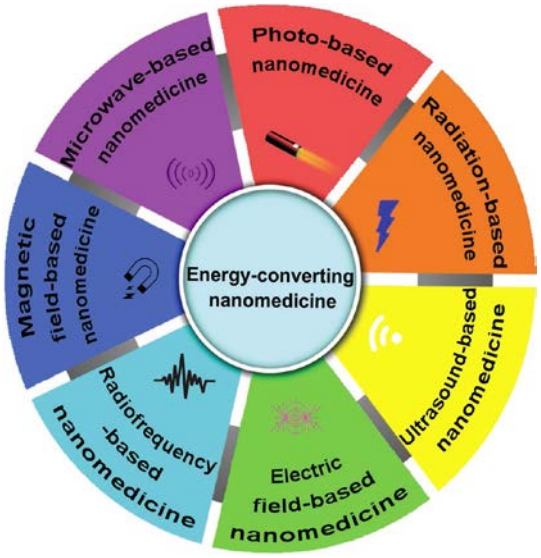

Figure 1: Summative scheme of versatile energy-converting nanomedicine as triggered by various energy-converting modalities.

References

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