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(57) Abstract :
7. ABSTRACT The present invention introduces earthquake-resistant building (100) technologies that integrate advanced damping systems (104), innovative structural designs, and advanced materials to enhance the seismic resilience of buildings. The invention aims to reduce the risk of structural failure and improve safety during earthquakes by incorporating a range of elements, including viscoelastic dampers, tuned mass dampers (TMDs) (104), base isolation systems (106), reinforced core structures (108), X-bracing (110), shear walls (110), high-performance concrete (112), shape memory alloys (SMAs) (114), and fiber-reinforced polymers (FRPs) (116). Advanced materials such as high-performance concrete (112), SMAs (114), and FRPs (116) are used to enhance the building's strength, flexibility, and durability. The invention offers a comprehensive solution for enhancing the seismic resilience of buildings, reducing the risk of damage and ensuring the safety of occupants during earthquakes. The figure associated with abstract is Fig. 1

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