

Abstract Details

Title: Evolution Of Flapping Wing Aerial Vehicles: A Review

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Abstract: The Motivation Behind The Concept Of Flapping Wing Aerial Vehicles Is The Flying Pattern Of Several Insects And Birds. It Is Very Challenging To Accurately Replicate The Design And Operation Of Natural Flyers In Human-Made Flapping Wing Aerial Vehicles. Intensive Research Is Being Conducted Worldwide To Address This Challenge. After Carefully Observing The Flying Patterns Of Natural Fliers, Different Designs And Prototypes Of Flapping Wing Aerial Vehicles (Fwav) Were Presented In Various Studies. Performance And Efficiency Of Fwav Based On Different Models And Techniques Were Also Found To Be Different. In This Study, Research Activities Conducted For The Advancement Of Fwav Have Been Reviewed. The Work Done In The Context Of Micro, Nano, And Pico Aerial Vehicles Have Been Mentioned And Discussed. A Lot Of Research Has Already Been Conducted In The Field Of Flapping Wing Micro Aerial Vehicles, While The Nano And Pico Aerial Vehicles Are In The Initial Stage Of Development. In The Development Of Flapping Wing Aerial Vehicles, Attempts Have Been Made To Improve Aerodynamic Structure, Wings Design, Structural Materials, Power Sources Etc. However, There Is A Need For Further Work To Improve The Performance Of These Miniature Human-Made Fliers.

Keywords: Flapping Wing Aerial Vehicle, Hovering, Gliding, Unmanned Aerial Vehicle.