# Utilizing the Biomimicry Principles in the Design of Metal Dynamic Facades

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## Abstract

The optimum trend towards developing systems and improving their functions always comes through using nature as the optimum trend as a main source of inspiration to reach radical solutions to many of problems facing humans as a basic principle of design. Thus، the creative thought of biomimicry presents a conscious emulation of nature in order to meet human needs according to the natural principles of life. Therefore، nature is considered as the model، standard، and guide for innovations that serve our human needs، as it is a model for creating forms، processes، systems and strategies. The biomimicry thought in the design of metal structures، including the design of metal facades، encouraged freedom from the constraints of traditional forms and to go out to the field of objective and formal metaphor for the vocabulary of the natural environment، so that the consistency between the origin and its natural surroundings with renewal in form and achievement of functions inspired by the behavior and functions of natural systems، and this research aims to Exploring the creative role of biomimicry in designing dynamic metal facades that respond to environmental influences، as well as identifying the means and procedures of natural inspiration according to biomimicry and the foundations of its design employment، as well as identifying mechanisms and procedures for evaluating design ideas deduced from the creative thinking of biometrics and the means of measuring their environmental compatibility. Accordingly، this study is concerned with taking advantage of the characteristics of the creative thought of biomimicry by inspiring the functions and behavior associated with natural structural formations and employing them in the design of dynamic metal facades that respond effectively to the characteristics and environmental influences. Natural models that perform this performance with high efficiency، and this is done by applying the biomimicry approach to the design of metal facades by applying the elements of biomicroscopic simulation and monitoring their impact on reducing energy consumption in buildings and interacting with environmental influences with a dynamic behavior.

## Ketwords:

Biomimicry - Facade Design - Metal Dynamic Facades

DOI: 10.21608/MJAF.2021.95245.2488