

# Designing Functional Jewelry in Light of the Living Organisms Morphology

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## **Abstract:**

God created living creatures and Provide them with qualities that help them to adapt to the environment to overcome many problems, By creating powerful and effective solutions, So we find that The majority of Technological developments and product designs are directly inspired by nature to solve many of the problems we face Daily, so Natural systems considered as a source of inspiration Leading to create design concepts Pioneering new technology, this is called biotechnology, biologically inspired design, Through the continuous development of designers' simulation of nature, many sources have emerged that can be relied upon as a source of inspiration, including the science of morphology of living organisms, The cells, their components, and the types of tissues found in these organisms,

This allows the jewelry designer to find design solutions to many daily problems facing humans, including the exposure of many car drivers, especially women, to sensitivity and dryness in the palms of the hands as a result of exposure to the sun, especially in the summer, directly and continuously for long periods while holding the steering wheel, and from here the designer begins to find design solutions to protect the hand while driving in light of the morphology of the bat wing. To design aesthetic and functional jewelry that addresses our daily problems, by studying the functions of bat wing components and their adaptation to the surrounding environment as an inspiration for jewelry design.

## **Keywords:**

Morphology, Functional jewelry, Bat wing

## **The Introduction:**

Research problem:

Inspiration from nature is an important and inexhaustible source for designers in general and jewelry designers in particular, and in light of the emergence of many scientific terms such as the morphology of living organisms, which is the science that allows the jewelry designer to simulate the function in living organisms to solve the problem of long-term exposure of the hands of motorists to the scorching sun, which causes Changing the color of the skin, as well as exposure of some to inflammation and sensitivity to sunlight, from the above. The research problem can be formulated in the following question:

Is it possible to find innovative design solutions for jewelry in light of the morphology of living organisms?

### **Research Importance:**

The importance of research lies in

- Shedding light on the importance of simulating nature in the light of the science of morphology of living organisms as a source of inspiration for finding design solutions for functional ornaments.

### **Search Goal:**

- Finding practical solutions to design aesthetic and functional ornaments that address our daily problems.

- Studying the functions of living organisms and their adaptation to the surrounding environment as an inspiration for designing functional jewelry.

### **Force Search:**

- The possibility of developing innovative design solutions for functional ornaments in the light of the morphology of living organisms.

### **Search Limits:**

- Ornaments of the palm and forearm area

- Studying the morphology of the bat wing as an inspiration in the process of functional design of ornaments.

## **Results and Recommendations:**

### **1- Search results**

□ Morphology is one of the most important biological sciences that provides us with the functional components of living organisms and their simulation in product design in general and jewelry design in particular, to solve existing design problems.

□ The jewelry designer can follow one of the design strategies inspired by nature to create new and distinctive designs, through building knowledge to draw inspiration from nature.

□ The morphology of living organisms is an inspiring entry point for the jewelry designer, helping him to design from a different and innovative point of view to find functional solutions for jewelry to solve problems.

### **2- Research recommendations**

The designer always tries to draw inspiration from nature, interact with it, and link it to the design of products. In the field of research, he recommends the following:

□ Work to involve more different sciences related to the environment and link them to the design of functional ornaments, in order to find many solutions to the problems facing humans.

□ It is important to conduct many studies between jewelry design and other sciences, including bionics and biomematics.

### **References:**

1. 'iibrahim , jamilat eadli , 2009: 'arijunumiat tasmim alhuly 'istkhdamyaan waqsadyaan lilmar'at almisria "majistir ghayr manshur , kuliyat alfunun altatbiqiat , jamieat hulwan , masr.

2. aljidawaa , nirmin kamil muhamad , 2017: "almurfulujaa yadeam altasmim min khilal al'astalham min altabieati" bahath manshur , majalat aleimarat walfunun , almujujalad althaamin , masr.
  3. aljidawi , nirmin kamil , 'ahmad kamal eali , yasr muhamad alhafiz , 2009: "almarkat aljaddirat walmutajaddirat wadawriha fi altasmim almustadam fi daw' 'iistilham eanasir al'iikulujii Eco-mimicry , almutamar alsaabie litanmiat alriyf almisrii , kuliyat alhandasat bishbin alkum , jamieat almanufiati.
  4. aljidawi , nirmin kamil , hindiun fatimat mahmud 2017: (almusamim alsinaeii wal'iistilham min altabieat fi daw' eilm al'iithulujii "bhath majalat majalat alfunun waleulum altatbiqiat , jamieat damyat , almujujalad alraabie , aiktubar.
  5. alsharif , habat humam ealaa , nifin firighli , eabdalmuneim mueawad , 2017: "jamaliaat eilam almurfulujii waltasmim albiyyi" bahath manshur , majalat buhuth altarbiat , jamieat almansurat , eadad 45 , yanayir.
  6. riad , eabd alfataah , 2000: altakwin fi alfunun altashkilia "dar alnahdat allearabiat , bayrut , lubnan.
  7. sulayman , 'amirat fuaad , 2010: wade manhajiat mutatawirat litasmim alhulaa liaistieab alkad bima layuathir slbaan ealaa abdae almusamim , bahath manshur , risalat dukkurat , kuliyat alfunun altatbiqiat , jamieat hulwan.
  8. eabd alrahman , eadil , 2006: "altasmim wafalsafatuh , tarzuh mudarasatu" , t 1 , dar alharamayn , alqahirat ,.
  9. eabdalealim saed sulayman dasuqi, 2020: "rahalat fi ealam alkhafafishi" qism wiqayat alnabat , kuliyat alziraeat , jamieat suhaj , almaktabat alziraeiat alshaamilati.
  10. harun , yahi 2003: "altasmim fi altabieati" , tarjamat 'uwrkhan muhamad eali , aistambul , turkia.
1. Anders Hedenström\* and L. Christoffer Johansson, 2015 "Bat flight: aerodynamics, kinematics and flight morphology" Published by The Company of Biologists Ltd | The Journal of Experimental Biology (2015) 218, 653-663 doi:10.1242/jeb.031203
  2. Carlos A. M. Versos and Denis A. Coelho, 2011 "Biologically Inspired Design: Methods and Validation". In book: Industrial Design - New Frontiers, November ,
  3. Gordon, Claire C. et al 1988: "Anthropometric Survey of U.S. Personnel: Summary Statistics Interim Report. March 1989.
  4. Sharon Miriam Swartz and Nicolai Konow "Advances in the study of bat flight: The wing and the wind" Canadian Journal of Zoology, DOI:10.1139/cjz-2015-0117, October, (12) 93 .2015
  5. Sophia C. ANDERSON & Graeme D. RUXTON, 2020 "The evolution of flight in bats: a novel hypothesis". 427 Mammal Review ISSN 0305-1838, 13 May, p
  6. Stephanie "Vierra, 2019 "Biomimicry: Designing to Model Nature" Vierra Design & Education Services, LLC
  7. Swartz, Sharon Miriam , Tatjana Hubel and Kenneth S Breuer, 2016 "Wake structure and kinematics in two insectivorous bats" Philosophical Transactions of The Royal Society 2016 B Biological Sciences September DOI:10.1098/rstb.2015.0385, 2015.0385: (1704) 371
  8. Y Studios "Biomimicry Design: Mother Nature's Influence on Products and Design" Category, PASSION, Published February 2020