



How Squids Change Color with Electricity: A Groundbreaking Discovery

Description

Squids can change colors to match their surroundings thanks to pigment-filled cells called chromatophores. Researchers at Northeastern University discovered that these pigment granules can turn light into electricity.

When exposed to sunlight, the granules produce a charge. Biochemist Leila Deravi explained that the more granules there are, the more electricity they generate, which could potentially be used as a power source for the squid.

This amazing ability allows squids to quickly change their appearance underwater, where light levels are low. The researchers were impressed by how fast and accurate the color-changing process is.

By studying these light sensors in squids, scientists hope to improve technologies like wearable electronics. This discovery could lead to new advancements in various fields.

The research was published in the Journal of Materials Chemistry C. Squids, like the longfin inshore squid, use their color-changing skills to survive in the ocean by hiding from predators.

Vocabulary List:

1. **Chromatophores** /krə'mætəfɔːz/ (noun): Pigment-filled cells that allow organisms to change color.
2. **Pigment** /'pɪɡ.mənt/ (noun): A substance that gives color to an organism or material.
3. **Granules** /'græn.ju:lz/ (noun): Small particles or grains often referring to aggregated structures.
4. **Electricity** /ɪˌlek'trɪs.ɪ.ti/ (noun): A form of energy resulting from the existence of charged particles.
5. **Advancements** /əd'væns.mənts/ (noun): Progress or improvements in a particular field.
6. **Predators** /'preɪ.ə.tərz/ (noun): Animals that prey upon other organisms for food.

Comprehension Questions

Multiple Choice

1. What is the name of the pigment-filled cells in squids that allow them to change colors?

Option: Chromosomes



- Option: Chromatophores
- Option: Chloroplasts
- Option: Chemotrophs

2. What can the pigment granules in squids do when exposed to sunlight?

- Option: Change shape
- Option: Conduct electricity
- Option: Produce sound
- Option: Attract prey

3. How do squids use their color-changing ability to survive in the ocean?

- Option: To communicate with each other
- Option: To scare off predators
- Option: To match their surroundings and hide from predators
- Option: To attract mates

4. According to the research, what could the electricity generated by the pigment granules potentially be used for?

- Option: As a communication signal
- Option: As a power source for the squid
- Option: To attract prey
- Option: To navigate underwater

5. Where was the research on squid color-changing abilities published?

- Option: Journal of Animal Behavior
- Option: Journal of Materials Chemistry C
- Option: Journal of Marine Biology
- Option: Journal of Evolutionary Ecology

6. Which specific type of squid was mentioned in the text that uses color-changing skills to hide from predators?

- Option: Humboldt squid
- Option: Giant squid
- Option: Longfin inshore squid
- Option: Dumbo octopus

True-False



7. Squids change colors using organelles called chromatophores.
8. Researchers at Northeastern University discovered that squid pigment granules can turn sound into electricity.
9. The color-changing process in squids is slow and imprecise.
10. The ability of squids to change colors quickly is useful for camouflage.
11. Studying light sensors in squids could lead to advancements in wearable electronics.
12. Squids primarily use their color-changing skills to attract prey.

Gap-Fill

13. According to the text, squid pigment granules can turn light into _____.
14. Researchers believe that the more pigment granules there are in squids, the more _____ they can generate.
15. The color-changing ability of squids allows them to quickly match their surroundings, especially in environments with low _____ levels.
16. Scientists are interested in studying light sensors in squids to improve technologies like wearable _____.
17. The discovery about squid color-changing abilities could lead to new advancements in various _____.
18. The research on squids was published in the Journal of Materials Chemistry _____.

Answer

Multiple Choice: 1. Chromatophores 2. Conduct electricity 3. To match their surroundings and hide from predators 4. As a power source for the squid 5. Journal of Materials Chemistry C 6. Longfin inshore squid

True-False: 7. True 8. False 9. False 10. True 11. True 12. False

Gap-Fill: 13. electricity



15. light 16. electronics 17. fields 18. C

CATEGORY

1. Health - LEVEL2

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