

# The Solar Handbag generates two watts of electricity, which can be used to charge mobile devices or to illuminate its interior with optical fibres.

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The solar collectors are sewn right onto the exterior surface of the handbag.

The Solar Handbag is a black tote bag with an ingenious twist. It was created by Danish design studio DIFFUS (founded by Hanne-Louise Johannesen and Michel Guglielmi), in collaboration with the Alexandra Institute and Centre for Software Innovation. It has 100 silicon solar cells or 'power stations', which collect daytime sunlight and generate two watts of usable energy – enough to run a mobile device. Thus the carrier can keep his or her electronic devices charged throughout the day, even with low levels of sunlight exposure. At night, opening the the bag activates a set of interior optical fibres, shaped like cooking whisks, which glow to assist the user in his or her search for objects.

The handbag's solar 'sequins' have been woven into this self-conductive embroidery, which transmits all harvested energy to a rechargeable lithium ion battery tucked inside a small compartment. These components were developed through a joint research effort between Forster Rohner AG, a Swiss embroidery company, and two regional schools: the University of Applied Sciences Rapperswil and the NTB Interstate University of Applied Sciences of Technology, Buchs, Switzerland (also known as NTB Buchs). By turning monocrystalline silicon – the most efficient photovoltaic material in existence today – into these miniature decorative adornments and utilizing traditional textile-making techniques, DIFFUS and its partners have increased the material's possibilities for use in future textile products.

At present, many textile-based solar products are limited in efficiency and aesthetics due to the size of solar cells that the exterior and interior surfaces can hold. The Solar Handbag is an important step forward in green fashion; its energy-harvesting maximizes design freedom as well as usefulness. Its trendy shape is more than simply fashionable; the handbag was designed to mimic an eclipse, alluding to the relationship between the sun and the light source and the enlightening.

In addition to art and design technologies, DIFFUS works with theoretical and practical applications of architecture. The designers compare the relationship of function and design in the Solar Handbag to that of nineteenth-century French architect Gustave Eiffel, famous for designing the Eiffel Tower, in which the armature is part of the splendour.

Where fashion and environmental concerns seem to be at odds, the fashion industry suggests that sustainable clothing and accessories are just as important as the overall effort to improve and save our planet. Indeed, as DIFFUS and its partners confirm, sustainable fashions that utilize sunlight to create electricity play a significant role in our overall sense of well-being. Other innovations from DIFFUS include the Solar Dress, a garment with sensors and LED lights woven into the fabric. *Nicole Caruth*

