

Origami-Nano-Technological Refugee Tent

Omar M Amireh. Origami-Nano-Technological Refugee Tent. J Am Sci 2017;13(1):20-30]. ISSN 1545-1003 (print); ISSN 2375-7264 (online). <http://www.jofamericanscience.org>. 3. doi:10.7537/marsjas130117.03.

Abstract: In a natural and normal design process, combining art with science and technology and in the appropriate environments would with no doubt generates and provide effective and enduring products or solutions. While art may be considered an unnecessary extravagance value in designing a refuge shelter or tent (whether disasters or war refugees), science and technology is counted as substantial waste in an excessive cost when applied in harsh and rough environments and at short time and tight space. This paper aims at studying the possibility of conceptual designing an Ori-Nano-Refugee-Tent, which based on the idea of combining Origami as an Art with Nanomaterial as a technology and Architecture as a science. The research investigates, on the one hand the poor; aesthetic, utilization and critical conditions of the existing refugee structures, along with, on the other hand, the strong self-folding static dynamic techniques of the appealing artistic concepts of the Origami Art, and the added technical, operational and contextual attributes and values of the Nanotechnology applications. Introducing both Origami and Nanotechnology would respond to the changing human-environment needs to reach, a consensus between both the design principles of the Origami, which provides for multi folding forms and variable aesthetic structures, and the Nanotechnology, which provides durability, usability and controllability. The research resulted in proposing an experimental-conceptual Origami structure of Nanocellulose sheets operating with self-folding electrical activation current. The research needs further analytical, mathematical and laboratory investigation in order to reach the suitable Origami folding form and turning the idea into a real application.

Keywords: Origami, Refugee House, Nanotechnology, Nanomaterials, Nanocellulose Technological Refugee; Tent