Using Carbon Nanotubes to Create Flexible Fuel Cells

Boumaraf, Nora (School: Austin Peace Academy)
Saeed, Ayla (School: Austin Peace Academy)

We introduce a flexible proton exchange membrane fuel cell (PEMFC) design using carbon nanotube fibers. Our innovative layout replaces traditional metal electrodes and pressure plates with layers of carbon nanotube fibers and a multi-chamber flexible cell. Our cell is more than 10 times lighter and 72.6% cheaper than a comparable traditional design. This cutting-edge device has a low volume and is far lighter, making it an exemplary choice for automotive and aerospace applications. Further research to miniaturize this design and improve carbon nanotube fiber mesh patterns can help produce better PEMFCs.

Awards Won: