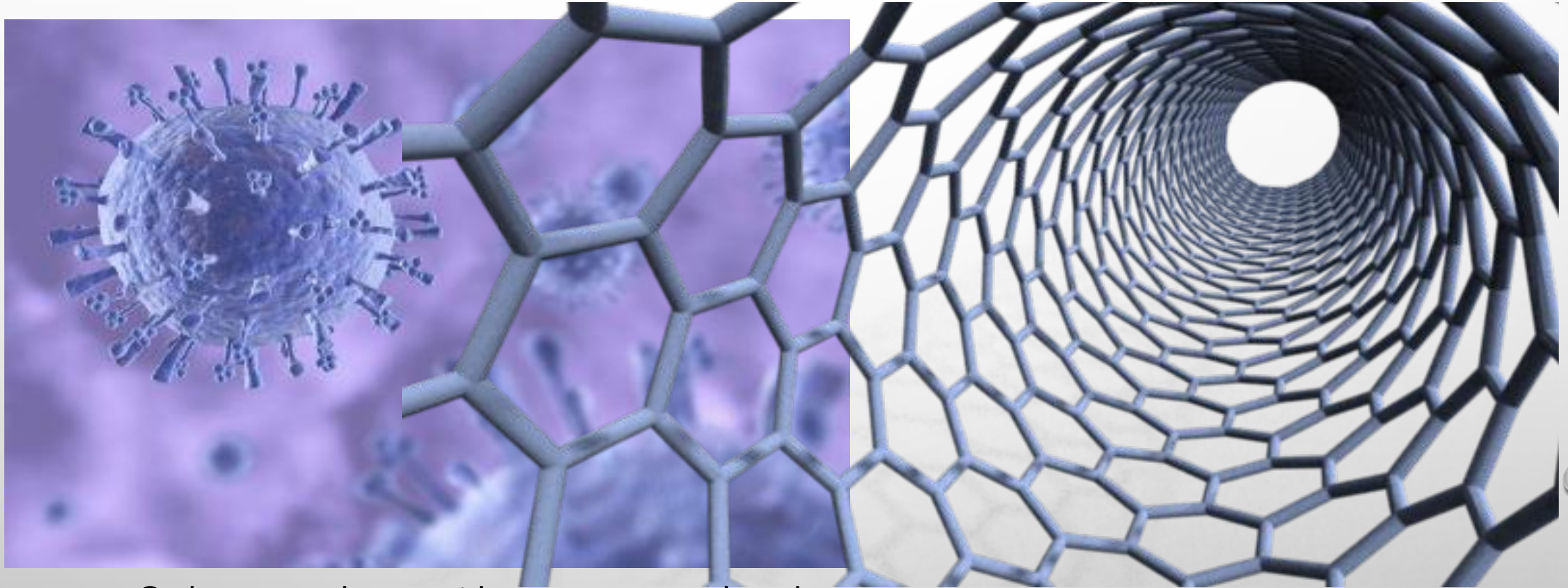


The background of the slide is a light gray gradient. It is decorated with numerous realistic water droplets of various sizes. Some droplets are large and prominent, while others are small and subtle. They are scattered across the slide, with a higher concentration in the top-left and bottom-right corners. The droplets have highlights and shadows, giving them a three-dimensional appearance.

NANOTECHNOLOGY ROCKS ARCHITECTURE

SOLUTIONS THROUGH ADVANCED MATERIALS
AND SMART BUILDING SYSTEMS

DESIGNING POWERFUL NANOCOMPOSITES



Carbon nanotubes provide extreme strength and are lightweight.

MATERIAL CHARACTERISTICS REQUIRED FOR CLIMATE INTENSITY

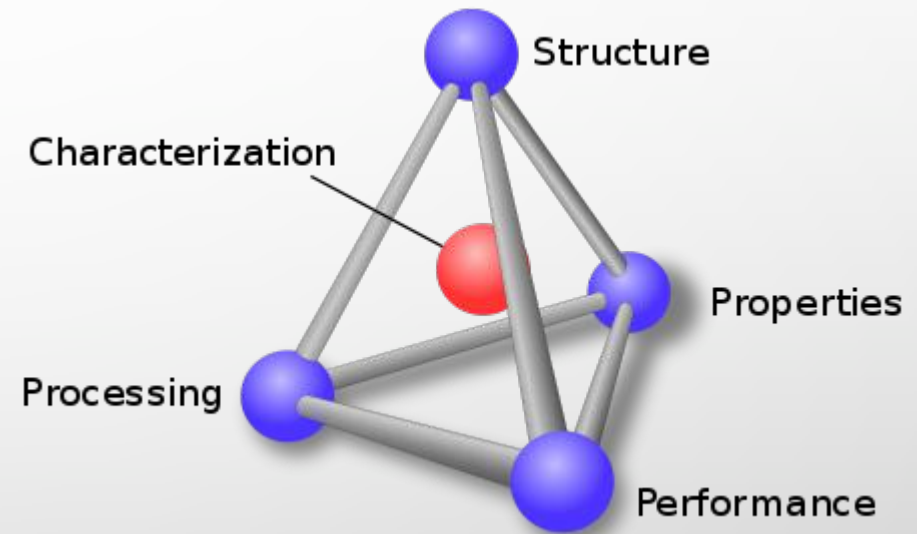
THERMAL BARRIERS PROTECT FROM EXTREME HEAT
GREATER PROTECTION FROM WATER, FIRE AND TOXINS
NANO CERAMICS OFFER MULTI-LEVEL SOLUTIONS
TO DESTRUCTIVE FORCES
ECO CONSCIOUS, NATURAL ELEMENTS
ANTI-MICROBIAL , HYPOALLERGENIC PREVENT DISEASE



RESILIENT IS THE NEW SUSTAINABILITY

Structures of all kinds must be engineered to survive extreme conditions with greatly enhanced performance, fast and inexpensive processing and properties beyond the legacy materials we currently depend on.

Nanocomposites offer super bonding strengths to existing materials for rejuvenating and repurposing thereby minimizing landfilling and maximizing the life of structure.



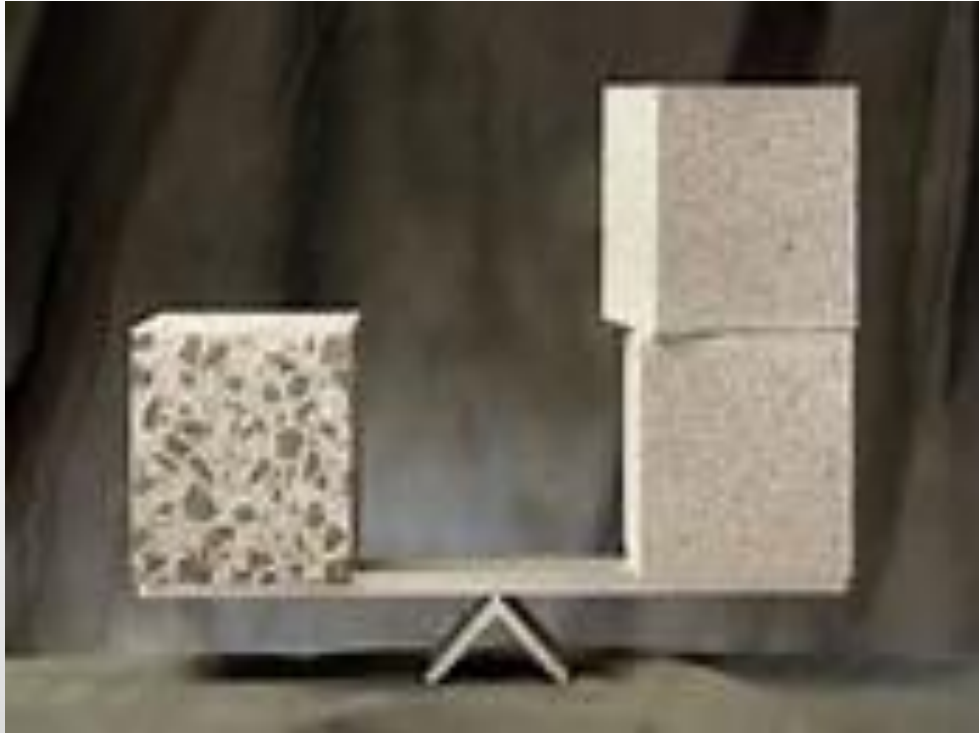
NANOTECHNOLOGY IN ARCHITECTURE

- IN THE CONSTRUCTION INDUSTRY, RAW MATERIALS SUCH AS SAND STONES, ROCK PIECES AND HARD ROCK SHELLS ARE BROKEN DOWN TO NANO SIZE.
- MATERIALS AT NANO DIMENSION SHOW ENHANCED PROPERTIES WHEN ENGINEERED AT NANOSCALE, POLYMER NANOCOMPOSITES INCREASE RESISTANCE TO FIRE, IMPROVED SERVICE LIFE, ABSORPTION OF CO₂ EMISSION.
- USE OF NANO SILICA IN REPLACEMENT TO REGULAR CEMENT, PROVIDES HIGHER DENSITY HELPING IN REDUCING LEAKS AND CRACKS WHILE USING LESS AND LIGHTER MATERIAL COMPONENTS.
- USE OF NANO ADDITIVES IN CONSTRUCTION ACT AS REPELLENTS TO DIFFUSE OR ENCAPSULATE HARMFUL ELEMENTS.
- NANO TECHNOLOGY IN PAINTS AND COATING ADDS PROPERTIES SUCH AS SELF CLEANING, ANTIMICROBIAL, SELF SCRATCH FILLING, RESISTANCE TO FIRE, ENHANCED REFLECTION OF LIGHT AND UV ABSORPTION.
- POLYMER NANOCOMPOSITES USE OFFERS A INCREASED TENSILE STRESS THUS INCREASING THE DURABILITY COMPARED TO PORTLAND CEMENT AND PROVIDING THE BUILDING WITH GREATER TENSILE AND COMPRESSION STRENGTH.
- NANOSCALE COPPER COMPOSITES ADDED TO STEEL INCREASES STRENGTH AND MAINTAINS STRUCTURAL INTEGRITY EVEN AT 100FT AND PROVIDES CORROSION RESISTANCE.
- TECHNOLOGY IS ALSO USED IN GLASS TO CONTROL LIGHT AND MAINTAIN SUSTAINABILITY IN SURROUNDINGS. NANO COATS OVER GLASS ARE SELF CLEANING.

ADVANCED GEOPOLYMER NANOCOMPOSITE MATRICES

Development of promising new materials such as graphene based Polymer nanocomposites will potentially allow the conducting of electricity directly on the building surface without the use of solar panels. BIPV(Building Integrated PV) can mean completely independent buildings with an integrated power source .

BUILDING CONSCIOUSLY FOR FUTURE GENERATIONS



Resilient
Affordable
Easy to use
Lightweight
Sustainable
Safer, healthier
Eco Conscious
Locally sourced

GRAPHENE BASED NANOCOMPOSITES

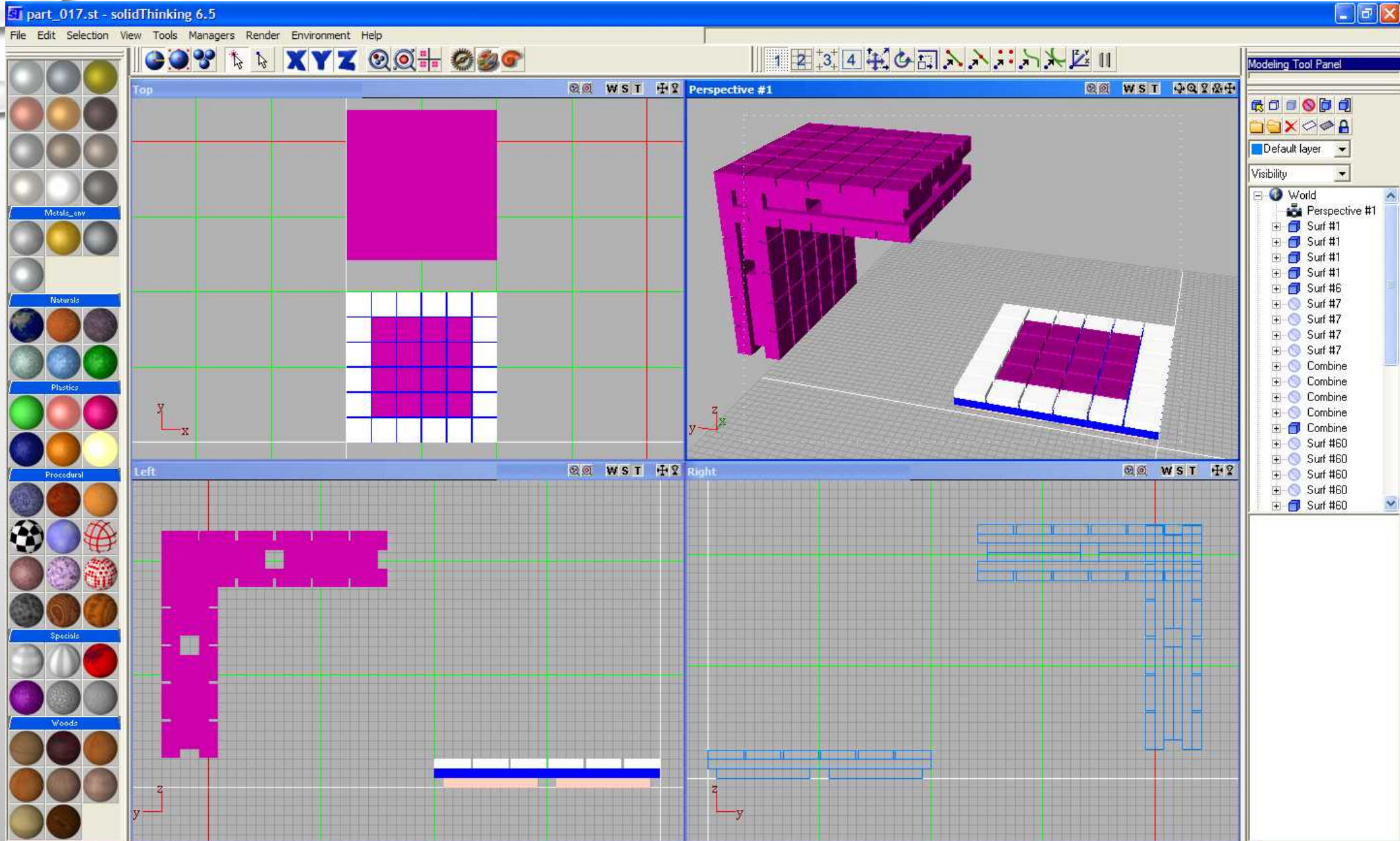


Jeffrey R. Potts, Daniel R. Dreyer, Christopher W. Bielawski, Rodney S. Ruoff

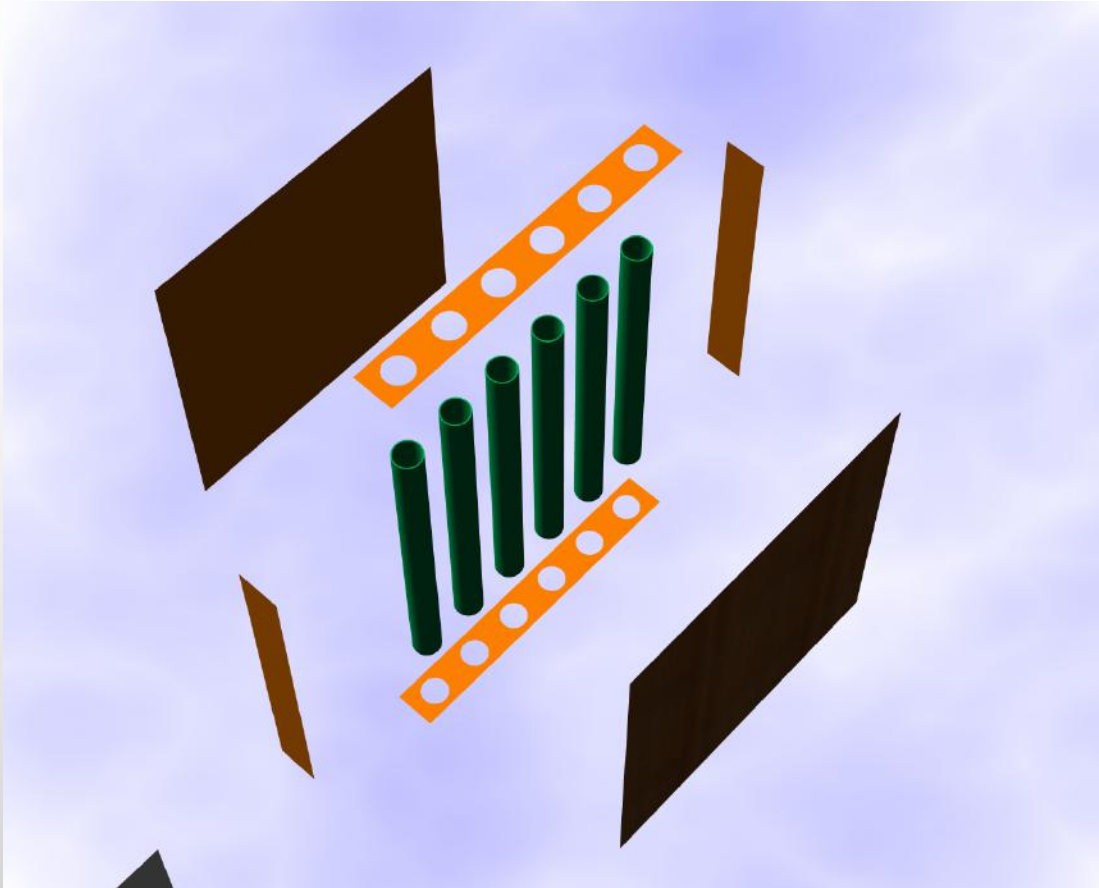
Graphene-based polymer nanocomposites

Polymer, Volume 52, Issue 1, 2011, 5–25

<http://dx.doi.org/10.1016/j.polymer.2010.11.042>



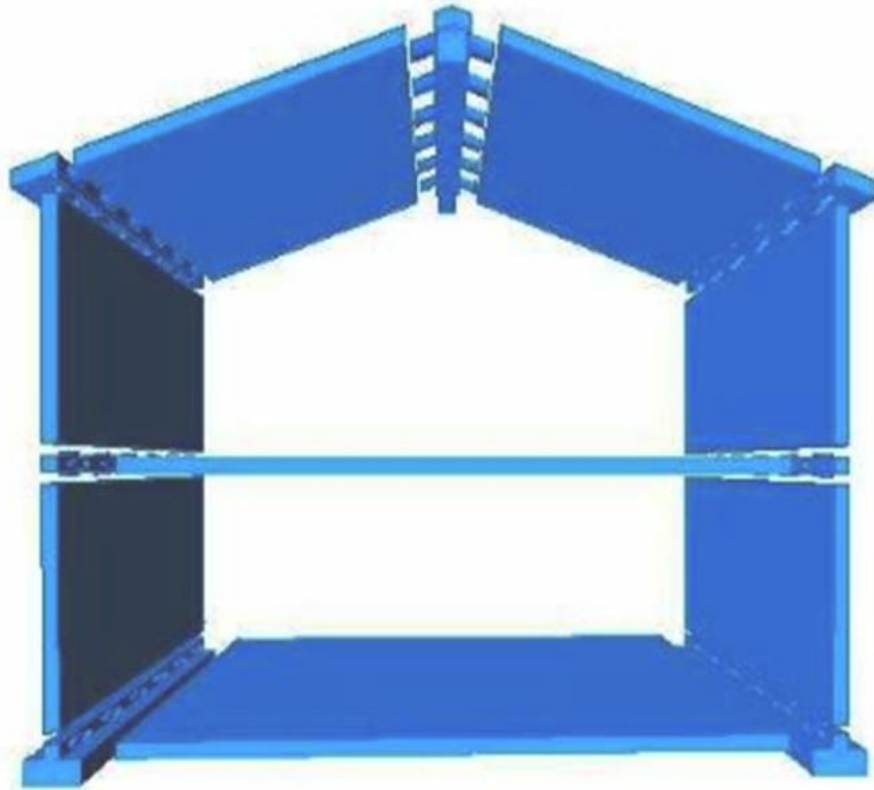
RESPONSIVE STRUCTURAL ELEMENTS



THIS SYSTEM WAS ENGINEERED AT THE REQUEST OF FEMA AND HUD FOLLOWING 9-11 AND HURRICANE KATRINA AS A SOLUTION TO MAKE RESILIENT STRUCTURES.

PATENTS ARE IN 80 COUNTRIES FOR RESPONSIVE STRUCTURAL ELEMENTS TO REPLACE POROUS MATERIALS THAT ARE DESTROYED IN DISASTER.

TUBE AND PANEL SYSTEM



RESPONSIVE STRUCTURAL PANELS PROVIDE A HOLISTIC INTEGRATED BUILDING SYSTEM WHICH CAN BE PRE-CAST, PREFABRICATED OR 3D PRINTED WITH CAVITIES IN HOLLOW TUBING TO REPLACE WOOD OR STEEL STUDS . THIS PATENTED SMART SYSTEM HAS MULTIPLE ADVANTAGES EMBEDDED WITH NANOSENSORS, NANOPHOTONICS, NANOCERAMIC COMPOSITE TUBES AND THIN SHELL PANELS .

BINI SHELLS: BIOMIMETIC DESIGN



ZAHA HADID



MICHEL REMON



WINNER OF TEL AVIV
UNIVERSITY
COMPETITION FOR
NANO BUILDINGS

View of Einstein Square (Image: Atelier d'Architecture Michel Remon, courtesy of Strelka KB)

3D PRINTED BUILDING



ADVANCED SOLUTIONS FOR A CHALLENGING ERA



*"I believe that we must consciously develop a greater sense of **Universal Responsibility**. We must learn to work not just for our own individual self, family or nation, but for the benefit of all mankind"*

- Dalai Lama XIV

THANK YOU FOR YOUR ATTENTION !



NanoArchitech

Green Building Technology
Design and Planning

Pre-covery prevents Recovery
Neuskyns - Get it on now!

Jan Thoren, CEO & Founder
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