List of Studies on Hydrogel Characteristics in Covid 19 Injections

Catching a SPY: Using the SpyCatcher-SpyTag and Related Systems for Labeling and Localizing Bacterial Proteins
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6539128/

Design properties of hydrogel tissue-engineering scaffolds
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3206299/

Engineering Protein Hydrogels Using SpyCatcher-SpyTag Chemistry
https://www.sciencedirect.com/org/science/article/pii/S1525779721012952

Hydrogel scaffolds for tissue engineering: Progress and challenges
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3963751/

Sustained Delivery of SARS-CoV-2 RBD Subunit Vaccine Using a High Affinity Injectable Hydrogel Scaffold
https://pubmed.ncbi.nlm.nih.gov/34755476/

An injectable hydrogel scaffold that delivers gene therapies locally
https://otc.duke.edu/technologies/delivering-non-viral-genes-for-tissue-regeneration-with-an-improved-hydrogel-scaffold/

Polymer-based nano-therapies to combat COVID-19 related respiratory injury: progress, prospects, and challenges
https://pubmed.ncbi.nlm.nih.gov/33787467/

Shear-thinning and self-healing hydrogels as injectable therapeutics and for 3D-printing
https://web.archive.org/web/20220128182949/https://pubmed.ncbi.nlm.nih.gov/28683063/

Shear-thinning and self-healing nanohybrid alginate-graphene oxide hydrogel based on guest-host assembly.
https://europepmc.org/article/MED/33737186

Hydrogel bioelectronics
https://web.archive.org/web/20220128062221/https://pubmed.ncbi.nlm.nih.gov/30474663/

Ultrastretchable and Wireless Bioelectronics Based on All-Hydrogel Microfluidics
https://web.archive.org/web/20220128064013/https://pubmed.ncbi.nlm.nih.gov/31418928/

Hydrogel facilitated bioelectronic integration
https://pubs.rsc.org/en/content/articlelanding/2021/bm/d0bm01373k

Tissue adhesive hydrogel bioelectronics
https://web.archive.org/web/20220128063431/https://pubmed.ncbi.nlm.nih.gov/33908586/

**Tissue-Engineered Blood Vessels (2005)**

**Researchers Grow New Blood Vessels In Just Seven Days** (2014)

**Arterial reconstruction with human bioengineered acellular blood vessels in patients with peripheral arterial disease**

**From Autologous Flaps to Engineered Vascularized Grafts for Bone Regeneration**

**China constructing blood vessels (2020)**

**Bioactive polymeric scaffolds for tissue engineering**

There are synthetic and **natural polymers**. They are elastic and made from these five different materials:

1. **Polyester polymers PLLA and PGA** are among the most commonly used biodegradable **synthetic polymers**.
2. **Silk fibroin** protein is extruded from insects and worms. It has biocompatible properties with the human body and ossess relatively high tensile strength.
3. **Collagen** is used for bone construction.
4. **Hyaluronic acid (HA)** is a form of hydrogel material for both hard and soft tissue construction.
5. **Chitosan** is biodegradable **polysaccharide** that comes from **chitin** via chemical hydrolysis. It's used in a gel, sponge, or fiber form.

## NANOWIRES

Nanowires are being used for the hybridization of humans. Pharmaceutical companies and world governments are attempting to grow artificial tissue inside humans, using organic matter from cross-species genomics. They appear to be trying to merge humans with electronic devices for internal tracking and remote control.

**Nanowires** are superconducter batteries used for tissue scaffolding inside the human body. I wrote about tissue scaffolding technology in December of 2021, in my article entitled, **Quantum Dots, DNA Barcoding, Nano-Razors & The Israeli State**.

*See studies and patent examples:*

**Nanowires**
https://patents.google.com/patent/US8115190B2/en

**Nanowire arrays for neurotechnology and other applications**
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1592113/

**Internalization of ferromagnetic nanowires by different living cells** (2010)
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1592113/

**Hydrophobic copper nanowires for enhancing condensation heat transfer**
https://www.sciencedirect.com/science/article/abs/pii/S2211285517300186

**Rotational Maneuver of Ferromagnetic Nanowires for Cell Manipulation**
https://www.academia.edu/es/43298108/Rotational_Maneuver_of_Ferromagnetic_Nanowires_for_Cell_Manipulation

**Internalization of ferromagnetic nanowires by different living cells**
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1592113/

**Ultrathin gold nanowires to enhance radiation therapy**
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1592113/