Innovation and Commercialization

UNIVERSITY OF TEXAS ARLINGTON

Biodegradable Dopant Free Conductive Polymers

Tech ID: UTA 15-51

INVENTOR: Dr. Yi Hong

TECHNOLOGY NEED

Developing responsive bio materials is a key to tissue engineering for tissue repair and regeneration. An environmentally benign biodegradable polymer will break through the bottleneck of conductive polymers in biomedicine which will broaden their applications in on-demand drug release, tissue regeneration and biodegradable electronics. Existing biodegradable conductive materials are multicomponent systems which require adding inorganic additives or dopants. Apart from being highly complex, these additives/dopants cause risks of toxicity and complications in in-vivo, which limit their broad bio-medical application. However, none of the existing biodegradable polymers are conductive without dopants/addictive.

INVENTION DESCRIPTION/SOLUTION

UTA researchers have developed a novel conductive polymer that conducts by itself without additives or dopants. The novel polymer addresses major challenges such as instability, uncontrollability, and complexity that plaque the existing conductive materials. The novel polymer is formed by chemically integrating biodegradable segment, doping molecule and conductive segment into single polymer chain. The synthesized polymer is conductive without dopants, soft, and elastic with good cell compatibility. Besides biomedical application, the novel polymer opens a new avenue for biodegradable electronics and also traditional chemical and electronics industry.

APPLICATIONS

- Tissue repair and Tissue regeneration
- Drug Delivery
- Biodegradable electronics
- Manufacturing of bio-medical products, and devices- 3D Porous scaffolds, microchips, and circuits

KEY BENEFITS

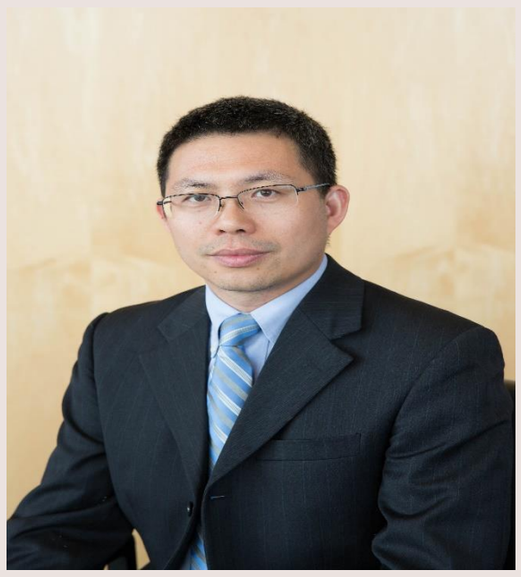
- Conductive without dopants and additives.
- Polymer is soft and elastic.
- Polymer has good processability and cytocompatibility
- Responsive drug release

STAGE OF DEVELOPMENT

Prototyped and Tested

INTELLECTUAL PROPERTY STATUS

WIPO: WD-US-1: US-2019-0031813-A1
EP: 177537370-1102
PCT/US2017/017925
US Application No.: 16/073229



About the Inventors:

Dr. Yi Hong

Contact information

For licensing, please contact
Jo Ramos, Ph.D.
(Licensing Associate)
j.ramos@uta.edu
innovation@uta.edu
P: 817.272.6269

Our mailing Address:

Innovation and Commercialization

701 S Nedderman Drive,
Suite 350, Arlington, TX
76019

Connect with us: