

# FCR 9

Office of the President  
September 13, 2019

Members, Board of Trustees:

## PATENT ASSIGNMENT REPORT

Recommendation: that the Board of Trustees accept the patent assignment report for the period April 1, 2019 to June 30, 2019.

Background: At its March 1997 meeting, the Board of Trustees authorized the University of Kentucky Research Foundation to conduct all future copyright and patent filings and prosecutions. Quarterly reports on patent and copyright applications are to be submitted to the Finance Committee of the Board.

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Action taken:     Approved     Disapproved     Other \_\_\_\_\_

PATENT ASSIGNMENTS  
FOR THE PERIOD April 1, 2019 TO June 30, 2019

Patents

The following assignments on behalf of the Board of Trustees of the University of Kentucky Research Foundation have been executed:

1. **U.S. Patent Application Serial Number:** 16/385,854  
**Filed:** April 16, 2019  
**Title:** DELIVERY SYSTEMS AND METHODS FOR REACTIVE HYDROXYL-CONTAINING COMPOUNDS  
**Inventors:** James Z. Hilt, Thomas D. Dziubla and Carolyn T. Jordan (College of Engineering)  
**Technical Description:** The invention provides methods for delivering a reactive hydroxyl-containing compound, a system for delivering reactive hydroxyl-containing compounds, and kits which comprise a reactive hydroxyl-containing compound.  
**Summary:** This invention provides a self-regulated antioxidant-releasing system which releases curcumin concentrations dependent on the concentration of hydrogen peroxide in the environment. This controlled-release system will deliver therapeutic quantities of antioxidant to the affected site, potentially leading to enhanced clinical response.  
**Application:** Delivery of phenol or polyphenol compounds to biological tissues for therapeutic purposes.
  
2. **U.S. Patent Application Serial Number:** 16/391,093  
**Filed:** April 22, 2019  
**Title:** SYSTEMS AND METHODS FOR FAST TEXTURE MAPPING OF 3D MODELS  
**Inventors:** Wei Li and Ruigang Yang (College of Engineering)  
**Technical Description:** The invention provides texture to a 3D model using a set of calibrated images. A framework, which optimizes different texture coordinates within a mesh of triangles in the selected source image space, is used to generate a visually pleasing appearance without visible distortions or seams.  
**Summary:** This invention provides a flexible and computationally effective texture optimization scheme for a 3D mesh model with registered images. It seeks to overcome issues that are commonly seen when low-cost commodity 3D full-frame sensors are used to capture 3D data and create 3D models. The invention focuses on resolving issues such as problems with directly projecting images onto the model and resulting inaccuracies, calibration errors, camera exposure variations, misaligned patches and color seams to create a higher level of realism in the textured model.  
**Application:** Texturing of 3D models generated by a computer.

- 3. U.S. Patent Application Serial Number:** PCT/US2019/028898  
**Filed:** April 24, 2019  
**Title:** DEVELOPMENT OF LOW-COST ACTIVATED CARBON FOR REMOVAL OF VOCS AND PHARMACEUTICALS FROM RESIDENTIAL DRINKING WATER  
**Inventors:** Steve Lipka (formerly of the Center for Applied Energy Research)  
**Technical Description:** The invention provides methods of producing carbonaceous materials from waste materials that are effective in removing contaminants from a water source.  
**Summary:** The invention provides systems incorporating, and uses of, hydrothermally dehydrated carbonaceous products, particularly from waste sources, that when activated provide for effective filters in water streams. These active particles have high micro-porosity and provide an improved and affordable approach to water decontamination.  
**Application:** Decontamination of water sources.
- 4. U.S. Patent Application Serial Number:** 16/395,742  
**Filed:** April 26, 2019  
**Title:** DIAGNOSIS AND TREATMENT OF CEREBRAL VESSEL DISEASE  
**Inventors:** Florin Despa and Larry B. Goldstein (College of Medicine)  
**Technical Description:** The invention relates to a method for detecting amylin in the skin of a subject afflicted with pre-diabetes and diagnosing the subject with cerebral small vessel disease based on the level of amylin in the skin.  
**Summary:** The invention relates to methods for determining the presence of pathologic amylin in a subject with diabetes or pre-diabetes. The method includes obtaining a skin sample from a subject and determining if there is pathologic amylin present in the skin sample.  
**Application:** Identifying individuals with pre-diabetes or diabetes who have cerebral small vessel disease.
- 5. U.S. Patent Application Serial Number:** 16/425,293  
**Filed:** May 29, 2019  
**Title:** CCR3 INHIBITION FOR OCULAR AND MACULAR DEGENERATION  
**Inventors:** Jayakrishna Ambati (formerly of the College of Medicine)  
**Technical Description:** The invention provides for the suppression of ocular angiogenesis by inhibiting the CCR3 receptor.  
**Summary:** The invention provides methods and compositions for the treatment or prevention of ocular angiogenesis and neovascularization. Administration of inhibitors of the CCR3 receptor or its ligands eotaxin, eotaxin-2 or eotaxin-3 inhibits ocular angiogenesis.  
**Application:** Treatment or prevention of ocular angiogenesis and neovascularization.
- 6. U.S. Patent Application Serial Number:** PCT/US19/35799  
**Filed:** June 6, 2019  
**Title:** METHOD OF TREATMENT WITH TRADIPITANT  
**Inventors:** Sharon Walsh (College of Medicine), Mihael H. Polymeropoulos and Gunther P. Birzniaks (Vanda Pharmaceuticals Inc.)

**Technical Description:** The invention provides for the use of the NK-1 receptor antagonist, tradipitant, for treatment of an individual experiencing or likely to experience an undesired consequence of opioid use.

**Summary:** The invention provides methods of treating an individual experiencing or at risk of experiencing an undesired consequence of opioid use and treating an individual who is experiencing or at risk of experiencing a craving for an opioid, as well as the use of the NK-1 receptor antagonist, tradipitant, in the treatment of such an individual.

**Application:** Treatment of opioid use.

**7. U.S. Patent Application Serial Number: 16/445,046**

**Filed:** June 18, 2019

**Title:** INCREASED CELL RETENTION IN DISEASED SITE WHEN CELLS ENCAPSULATED IN GELATIN METHACRYLATE AND POLYETHYLENE GLYCOL DIACRYLATE HYDROGELS

**Inventors:** Anuhya Gottipati, Irene Kalashnikova, Bradley J. Berron (College of Engineering) and Ahmed Abdel-Latif (College of Medicine)

**Technical Description:** The invention provides a composition of encapsulated stem cells and a method for improving retention of a stem cell at an *in vivo* site of injury.

**Summary:** The invention provides compositions of dual-layer encapsulated stem cells and methods for improving retention of stem cell *in-vivo* at a site of injury.

**Application:** Treatment of ischemic heart disease.

Patent Activities  
Fiscal year to date as of June 30, 2019

	Q1	Q2	Q3	Q4	Total
Full Patent Applications	7	7	7	7	28
Provisional Patent Applications	10	16	10	30	66
Patents Issued	2	6	7	11	26
License Income	\$1,176,827.69	\$75,162.99	\$1,149,705.55	-\$45,172.47	\$2,356,523.76

Patent Application Summary Table

Inventors	College(s)	Title	Brief description
<b>Biomedical</b>			
James Z. Hilt, Thomas D. Dziubla and Carolyn T. Jordan	Engineering	DELIVERY SYSTEMS AND METHODS FOR REACTIVE HYDROXYL- CONTAINING COMPOUNDS	Methods for delivering a reactive hydroxy compound for therapeutic purposes.
Florin Despa and Larry B. Goldstein	Medicine	DIAGNOSIS AND TREATMENT OF CEREBRAL VESSEL DISEASE	A method for detecting amylin in the skin of a subject afflicted with pre- diabetes to enable diagnosing the subject with cerebral small vessel disease.
Jayakrishna Ambati	Medicine	CCR3 INHIBITION FOR OCULAR AND MACULAR DEGENERATION	Methods and compositions for the treatment or prevention of ocular angiogenesis and neovascularization.
Sharon Walsh	Medicine	METHOD OF TREATMENT WITH TRADIPITANT	Use of the NK-1 antagonist, tradipitant, for treatment of an individual experiencing or likely to experience an undesired consequence of opioid use.
Anuhya Gottipati, Irene Kalashnikova, Bradley J. Berron and Ahmed Abdel- Latif	Engineering and Medicine	INCREASED CELL RETENTION IN DISEASED SITE WHEN CELLS ENCAPSULATED IN GELATIN METH- ACRYLATE AND POLYETHYLENE GLYCOL DIACRY- LATE HYDROGELS	Compositions of dual-layer encapsulated stem cells and methods for improving retention of stem cell <i>in-vivo</i> at a site of injury.

<b>Engineering</b>			
Wei Li and Ruigang Yang	Engineering	SYSTEMS AND METHODS FOR FAST TEXTURE MAPPING OF 3D MODELS	A flexible and computationally effective texture optimization scheme for a 3D mesh model.
Steve Lipka	Formerly Center for Applied Energy Research	DEVELOPMENT OF LOW-COST ACTIVATED CARBON FOR REMOVAL OF VOCS AND PHARMACEUTICALS FROM RESIDENTIAL DRINKING WATER	Hydrothermally dehydrated carbonaceous products, particularly from waste sources, that effectively filter water.