

FCR 13

Office of the President
February 22, 2019

Members, Board of Trustees:

PATENT ASSIGNMENT REPORT

Recommendation: that the Board of Trustees accept the patent assignment report for the period October 1, 2018 to December 31, 2018.

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.

Action taken: Approved Disapproved Other _____

PATENT ASSIGNMENTS
FOR THE PERIOD October 1, 2018 TO December 31, 2018

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:** 16/185,120
Filed: November 9, 2018
Title: A LOW-COST SELECTIVE PRECIPITATION CIRCUIT FOR RECOVERY OF RARE EARTH ELEMENTS FROM ACID LEACHATE OF COAL WASTE
Inventors: Rick Honaker and Wencai Zhang (College of Engineering)
Technical Description: This invention concerns a process of selective precipitation to recover rare earth elements from acidic media derived from coal and coal byproducts via two main steps of sequential precipitation and selective precipitation.
Summary: The present invention provides a process of selective precipitation recovery of rare earth elements from acidic media derived from coal and coal byproducts.
Application: Recovery of rare earth elements from coal and coal byproducts.

2. **U.S. Patent Application Serial Number:** 16/305,386
Filed: November 29, 2018
Title: PROSTAGLANDIN E SYNTHASE INHIBITORS AND METHODS FOR UTILIZING THE SAME
Inventors: Chang-Guo Zhan, Fang Zheng, Kai Deng and Ziyuan Zhou (College of Pharmacy)
Technical Description: This invention provides prostaglandin E synthase (PGES) inhibitors, and in particular, microsomal PGES-1 (mPGES-1) inhibitors. Embodiments of the invention also relate to methods of utilizing mPGES-1 inhibitors to treat inflammatory disorders.
Summary: Compounds and compositions are provided that can inhibit microsomal prostaglandin E synthase-1 (mPGES-1). The compounds and compositions can reduce inflammation in a subject, such as inflammation caused by an inflammatory disorder or symptoms thereof.
Application: Treatment of inflammatory disorders with microsomal PGES-1.

3. **U.S. Patent Application Serial Number:** 16/206,039
Filed: November 30, 2018
Title: SYSTEM AND METHOD FOR ASSESSMENT OF RETINAL AND CHOROIDAL BLOOD FLOW NONINVASIVELY USING COLOR AMPLIFICATION
Inventors: Romulo Albuquerque, Nicolas Bell and Paras Vora (College of Medicine)
Technical Description: This invention modifies and enhances Eulerian Video Magnification (EVM), which amplifies small changes from seemingly static video, revealing subtle variations that would otherwise be invisible to the naked eye. This has

been achieved by the addition of pre-processing image stabilization to the EVM algorithm using reference points specific to the retina, as well as interfacing with other biosensors to continuously refine variables in the algorithm to improve sensitivity and quality.

Summary: This invention provides a system for assessing retinal and choroidal blood flow in a subject.

Application: Diagnosis of diabetic retinopathy

4. **U.S. Patent Application Serial Number:** PCT/US18/64317
Filed: December 6, 2018
Title: bZIP TRANSCRIPTION FACTORS REGULATE CONVERSION OF NICOTINE TO NORNICOTINE
Inventors: Ling Yuan, Sanjay Singh, Sitakanta Pattanaik (College of Agriculture, Food and Environment) and Darlene Lawson (R.J. Reynolds Tobacco Company)
Technical Description: This invention relates to transcription factors for regulating conversion of nicotine to nornicotine and methods of use thereof.
Summary: A method of decreasing conversion of nicotine to nornicotine is provided.
Application: Reduction of nornicotine, a carcinogen, in tobacco.
5. **U.S. Patent Application Serial Number:** 16/211,757
Filed: December 6, 2018
Title: AMIDATED DOPAMINE NEURON STIMULATING PEPTIDES FOR CNS DOPAMINERGIC UPREGULATION
Inventors: Luke Bradley, Don Gash and Greg Gerhardt (College of Medicine)
Technical Description: This invention provides novel proteins, amidated glial cell line-derived neurotrophic factor (GDNF) peptides or Amidated Dopamine Neuron Stimulating (ADNS) peptides, that are useful for treating brain diseases and injuries that result in dopaminergic deficiencies.
Summary: This invention relates to novel proteins useful for treating brain diseases and injuries that result in dopaminergic deficiencies.
Application: Treatment of dopaminergic deficiencies such as Parkinson's disease.
6. **U.S. Patent Application Serial Number:** PCT/US18/653390
Filed: December 13, 2018
Title: COMPOSITIONS AND METHODS FOR ENHANCING NEURO-REPAIR
Inventors: Gregory Bix (College of Medicine)
Technical Description: This invention provides a treatment of ischemia, including cerebral ischemia and stroke utilizing Perlecan Domain V.
Summary: The present invention relates to methods for enhancing recovery after an ischemic injury, including cerebral ischemia and stroke, by administration of Domain V protein.
Application: Treatment of ischemia
7. **U.S. Patent Application Serial Number:** 16/234,950
Filed: December 28, 2018
Title: OXIDATION CATALYST

Inventors: Mark Crocker, Yang Song (Center for Applied Energy Research) and Justin Mobley (College of Arts and Sciences)

Technical Description: This invention relates to an extremely active and selective catalyst to assist in oxidation of benzylic alcohols into carbonyl compounds.

Summary: This invention provides a catalyst of gold particles on a layered double hydroxide (LDH) that assists in oxidation of alcohols in lignins.

Application: The catabolic breakdown of lignins into alcohols for use as chemical feedstocks.

Patent Activities
Fiscal year to date as of December 31, 2018

	Q1	Q2	Q3	Q4	Total
Full Patent Applications	7	7			14
Provisional Patent Applications	10	16			26
Patents Issued	2	6			8
License Income	\$1,176,827.69	\$75,162.99			\$1,251,990.68

Patent Application Summary Table

Inventors	College(s)	Title	Brief description
Biomedical			
Chang-Guo Zhan, Fang Zheng, Kai Deng and Ziyuan Zhou	Pharmacy	PROSTAGLANDIN E SYNTHASE INHIBITORS AND METHODS FOR UTILIZING THE SAME	Compounds and compositions of microsomal PGES-1 to treat inflammatory disorders.
Romulo Albuquerque, Nicolas Bell and Paras Vora	Medicine	SYSTEM AND METHOD FOR ASSESSMENT OF RETINAL AND CHOROIDAL BLOOD FLOW NONINVASIVELY USING COLOR AMPLIFICATION	A system for assessing retinal and choroidal blood flow in a subject.

Ling Yuan, Sanjay Singh, Sitakanta Pattanaik and Darlene Lawson	Agriculture, Food and Environment	bZIP TRANSCRIPTION FACTORS REGULATE CONVERSION OF NICOTINE TO NORNICOTINE	Reduction of nornicotine, a carcinogen, in tobacco.
Luke Bradley, Don Gash and Greg Gerhardt	Medicine	AMIDATED DOPAMINE NEURON STIMULATING PEPTIDES FOR CNS DOPAMINERGIC UPREGULATION	Treatment of dopaminergic deficiencies such as Parkinson's disease.
Gregory Bix	Medicine	COMPOSITIONS AND METHODS FOR ENHANCING NEURO-REPAIR	Treatment of ischemia
Engineering			
Rick Honaker and Wencai Zhang	Engineering	A LOW-COST SELECTIVE PRECIPITATION CIRCUIT FOR RECOVERY OF RARE EARTH ELEMENTS FROM ACID LEACHATE OF COAL WASTE	Recovery of rare earth elements from coal waste.
Mark Crocker, Yang Song and Justin Mobley	Center for Applied Energy Research and College of Arts and Sciences	OXIDATION CATALYST	A catalyst of gold particles on a layered double hydroxide (LDH) that assists in oxidation of alcohols in lignins.