



INNOVATION AWARDS 2023



US Patents issued in fiscal year 2023

US 11,395,616 Catheter Assemblies, Oxygen-Sensing Assemblies, and Related Methods

Kai Kuck

Natalie A. Silverton, *first issued patent*

Spencer B. Shumway

Bradley J. Stringer

US 11,401,552 Methods of Identifying Male Fertility Status and Embryo Quality

Douglas T. Carrell

Bradley Cairns, *first issued patent*

Kenneth I. Aston

Timothy Jenkins, *first issued patent*

Andrew David Smith

Philip James Uren

Alan Horsager

US 11,406,361 Mapping Shear Wave Velocity and Shear Modulus in Biological Tissues

Lorne Hofstetter, *first issued patent*

Bradley Drake Bolster

Dennis L. Parker

Henrik Odeen

Allison Payne

US 11,408,846 Laterally Actuated Amplified Capacitive Vapor Sensor

Carlos H. Mastrangelo

Hanseup Kim

Rugved Likhite, *first issued patent*

US 11,422,090 Phase Plate for High Precision Wavelength Extraction in a Microscope

Jason Martineau, *first issued patent*

Jordan Gerton

Erik Jorgensen

Tim Allen, *first issued patent*

US 11,426,433 Therapeutic Compositions

Jo-Anna Reems

Jan Pierce

US 11,434,481 Rapid Non-Destructive Genetic Material Collection

Raheel Samuel

Christopher J. Lambert, *first issued patent*

Bruce K. Gale

Joshua L. Bonkowsky, *first issued patent*

Briana Freshner, *first issued patent*

Tak Chi Arlen Chung, *first issued patent*

US 11,437,698 N-Way Ring Combiner/Divider

Kyle David Holzer, *first issued patent*

Jeffrey Walling

US 11,441,166 Redox Enzyme-Embedded Pyrene-Poly(Ethylenimine) Hydrogel Electrode for Nitrogenous Molecule Generation

David P. Hickey, *first issued patent*

Shelley D. Minter, *first issued patent*

US 11,445,997 Ultrasound Imaging of Biomarker Sensitive Hydrogels

Mahender nath Avula, *first issued patent*

Douglas A. Christensen

Navid Farhoudi

Stan Kanarowski

Julia Koerner, *first issued patent*

Jules John Magda

Rami Sami Marrouche, *first issued patent*

Christopher F. Reiche, *first issued patent*

Florian Solzbacher

Michael David Sorenson, *first issued patent*

US 11,450,385 Digital RRAM-Based Convolutional Block

Pierre-Emmanuel Gaillardon

Edouard Giacomini

Joao Vieira

US 11,457,965 Rotational Guided Growth Devices, Systems, and Methods

Zackery Evans, *first issued patent*

T. Wade Fallin

Peter M. Stevens

US 11,464,397 Soft Robot to Navigate the Natural Lumens of a Living Organism Using Undulatory Locomotion Generated by a Rotating Magnetic Dipole Field

Jacob J Abbott

Lan N. Pham, *first issued patent*

US 11,466,320 Multi-Sequence Capture System

John D. Philips

Jennifer M. Heemstra

US 11,467,165 Rapid Assay for Detection of SARS-CoV-2 Antibodies

Hans Haecker

Vanessa Redecke

US 11,471,557 In Situ Solidifying Solutions and Methods of Making and Using Thereof

Russell J. Stewart

US 11,497,629 Osseointegrated Implant Assembly Having Transverse Through-Openings and Systems and Methods of Using Same

Alex Drew, *first issued patent*

Kent Bachus

Erik Kubiak

Robert Tashjian, *first issued patent*

Heath Henninger, *first issued patent*

US 11,517,900 Microfluidic System for Sperm Separation and Enrichment from Various Types of Sperm Samples

Raheel Samuel

Bruce Gale

Alex Jafek

Timothy Jenkins

Jim Hotaling

Douglas Carrell

Jiyoung Son, *first issued patent*

US 11,522,069 Thin-Film Semiconductors

Heayoung Yoon, *first issued patent*

David Magginetti, *first issued patent*

US 11,523,834 Cartilage and Bone Harvest and Delivery System and Methods

Zackery Evans

T. Wade Fallin

Travis G. Maak, *first issued patent*

Charles L. Saltzman

US 11,523,852 Active Compression Bone Screw

Colin S. Gregersen

T. Wade Fallin

Charles L. Saltzman

US 11,539,590 Detect Impact of Network Maintenance in Software Defined Infrastructure

Muhammad Bilal Answer

Vijay Gopalakrishnan

Aisha Syed

Jacobus Erasmus Van der Merwe

US 11,542,254 Methods and Composition of 4-Substituted Benzoylpiperazine-1-Substituted Carbonyls as Beta-Catenin/B-Cell Lymphoma 9 Inhibitors

Haitao Ji

Min Zhang

US 11,553,948 Bone Fixation Devices, Systems, and Methods

Justin Haller, *first issued patent*

T. Wade Fallin

Colin S. Gregersen

US 11,559,563 Use of Soluble Pro(Renin) Receptor to Treat Metabolic Disorders and Related Conditions

Tianxin Yang

US 11,560,384 Benzonorbornadiene Derivatives and Reactions Thereof

Raphael Franzini, *first issued patent*

US 11,563,078 Ultra-Compact Inductor Made of 3D Dirac Semimetal

Berardi Sensale Rodriguez, *first issued patent*

Ashish Chanana, *first issued patent*

Steven M Blair

Vikram Deshpande, *first issued patent*

Michael A Scarpulla

Hugo Orlando Condori

Jeffrey Walling

US 11,573,233 Systems and Methods for Label-Free Detection of Analytes

John Conboy, *first issued patent*

Krystal Sly

US 11,596,346 Signal Processing for Decoding Intended Movements from Electromyographic Signals

Suzanne Wendelken
Tyler Davis
David Page
David Kluger
David Warren
Gregory Clark
Christopher Duncan
Jacob Nieveen

US 11,602,270 Devices and Methods for Mapping Cardiac Tissue

Frank B. Sachse
Robert W. Hitchcock
Nassir F. Marrouche
Nathan J. Knighton
Chao Huang

US 11,613,537 Sensor Compounds and Associated Methods and Devices

Ling Zang
Paul Slattum

US 11,624,105 Thermo-Hydrogen Refinement of Microstructure of Titanium Materials

James D. Paramore
Brady G. Butler
Matthew K Dunstan
Jonathan P. Ligda
Zhigang Z. Fang

US 11,640,013 Weather-Detecting Devices and Related Methods

Timothy John Garrett
Florian Solzbacher
Konstantin Shkurko

US 11,640,013 Weather-Detecting Devices and Related Methods

Timothy John Garrett
Florian Solzbacher
Konstantin Shkurko

US 11,660,032 Catheter Assemblies, Oxygen-Sensing Assemblies, and Related Methods

Natalie A. Silverton
Kai Kuck
Bradley J. Stringer
Spencer B. Shumway
Lars Lofgren, *first issued patent*

US 11,660,194 Cartilage and Bone Harvest and Delivery System and Methods

Zackery Evans
T. Wade Fallin
Travis G. Maak
Charles L. Saltzman

US 11,672,944 Methods, Systems, and Apparatus for Modulating or Reducing Photophobic Responses

Steven M. Blair
Bradley Jay Katz

US 11,674,878 Differential Emissivity Based Evaporable Particle Measurement

Tim Garrett
Dhiraj Kumar Singh, *first issued patent*
Karlle Rees, *first issued patent*
Eric Pardyjak, *first issued patent*

US 11,678,035 Translucent Imaging Systems and Related Methods

Rajesh Menon
Ganghun Kim

US 11,684,675 Dimeric Collagen Hybridizing Peptides and Methods of Using

Julian Kessler
Michael S. Yu
Yang Li

US 11,684,681 Method of Detecting Eosinophil Degranulation in the Respiratory Tract

Leonard F. Pease
Hedieh Saffari
Gerald J. Gleich
Kristin M. Leiferman
Kathryn A. Peterson
Russell Morris Condie