

January 01, 2020	Noninvasive monitoring of liver metastasis development via combined multispectral photoacoustic imaging and fluorescence diffuse optical tomography	Rationale: In vivo molecular imaging in preclinical animal models is a tool of choice for understanding the pathophysiological mechanisms involved in
January 01, 2020	Surface-anchored framework for generating RhD-epitope stealth red blood cells	Rhesus D (RhD) is one of the most important immunogenic antigens on red blood cells (RBCs).
January 01, 2019	Indocyanine Green J Aggregates in Polymersomes for Near-Infrared Photoacoustic Imaging	Clinical translation of photoacoustic imaging (PAI) has been limited by the lack of near-infrared (NIR) contrast agents with low toxicity required for
December 21, 2018	Gadolinium Doping Enhances the Photoacoustic Signal of Synthetic Melanin Nanoparticles: A Dual Modality Contrast Agent for Stem Cell Imaging	ABSTRACT: In this paper, we show that gadolinium-loaded synthetic melanin nanoparticles (Gd(III)-SMNPs) exhibit up to a 40-fold enhanced photoacoustic
April 30, 2018	Intraoperative Resection Guidance with Photoacoustic and Fluorescence Molecular Imaging Using an Anti-B7-H3 Antibody-Indocyanine Green Dual Contrast Agent	Breast cancer often requires surgical treatment including breast-conserving surgical resection.
January 01, 2016	Spectroscopic photoacoustic molecular imaging of breast cancer using a B7-H3-targeted ICG contrast agent	Purpose: Breast cancer imaging methods lack diagnostic accuracy, in particular for patients with dense breast tissue, and improved techniques are crit
December 30, 2020	Ultrasound Molecular Imaging of Renal Cell Carcinoma: VEGFR targeted therapy monitored with VEGFR1 and FSHR targeted microbubbles	Recent treatment developments for metastatic renal cell carcinoma offer combinations of immunotherapies or immunotherapy associated with tyrosine kina
June 01, 2020	Prussian blue nanocubes as a multimodal contrast agent for image-guided stem cell therapy of the spinal cord	Translation of stem cell therapies to treat injuries and diseases of the spinal cord is hindered by lack of real-time monitoring techniques to guide r
June 01, 2020	Gambogic acid augments black phosphorus quantum dots (BPQDs)-based synergistic chemo-photothermal therapy through downregulating heat shock protein expression	In an attempt to attain synergistic therapeutic benefits and address various intrinsic limitations of the highly efficient black phosphorus quantum do
June 01, 2020	Monocyte mimics improve mesenchymal stem cell-derived extracellular vesicle homing in a mouse MI/RI model	Stem cell-derived extracellular vesicles (EVs) have been demonstrated to be effective in heart repair and regeneration post infarction.
May 01, 2020	Biodegradable theranostic nanoplatfoms of albumin-biomaterialized nanocomposites modified hollow mesoporous organosilica for photoacoustic imaging guided tumor synergistic therapy	Benefit from the integration of therapeutic and diagnostic functions, theranostic nanoplatfoms have attracted widespread attention in preclinical res
May 01, 2020	Co-delivery of Cu(I) chelator and chemotherapeutics as a new strategy for tumor theranostic	Chelating Cu from tumors has been verified as an effective and promising strategy for cancer therapy through antiangiogenesis.
May 01, 2020	Melanin-instructed biomimetic synthesis of copper sulfide for cancer phototheranostics	Biomimetic synthesis is a promising strategy for the preparation of nanotheranostics with excellent biocompatibility.
April 01, 2020	Less is more: Silver-AIE core@shell nanoparticles for multimodality cancer imaging and synergistic therapy	Nanomaterials with integrated multiple imaging and therapeutic modalities possess great potentials in accurate cancer diagnostics and enhanced therape
April 01, 2020	Surface-modified GVs as nanosized contrast agents for molecular ultrasound imaging of tumor	Nanobubbles, as a kind of new ultrasound contrast agent (UCAs), have shown promise to penetrate tumor vasculature to allow for targeted imaging.

April 01, 2020	Scalable dextran-polypyrrole nano-assemblies with photothermal/photoacoustic dual capabilities and enhanced biocompatibility	Polypyrroles have shown great potential in photoacoustic imaging and photothermal therapy owing to its excellent photothermal conversion capabilities.
April 01, 2020	Rod-based urchin-like hollow microspheres of Bi₂S₃: Facile synthesis, photo-controlled drug release for photoacoustic imaging and chemo-photothermal therapy of tumor ablation	Hollow nanostructures have been evoked considerable attention owing to their intriguing hollow interior for important and potential applications in dr
April 01, 2020	Janus γ-Fe₂O₃/SiO₂-based nanotheranostics for dual-modal imaging and enhanced synergistic cancer starvation/chemodynamic therapy	Multimodal cancer synergistic therapy exhibited remarkable advantages over monotherapy in producing an improved therapeutic efficacy.
April 01, 2020	TRAIL-expressing cell membrane nanovesicles as an anti-inflammatory platform for rheumatoid arthritis therapy	Rheumatoid arthritis (RA) is one of the most common chronic autoimmune diseases.
March 31, 2020	Long Circulating Drug Dye Based Micelles with Ultrahigh pH Sensitivity for Deep Tumor Penetration and Superior Chemo Photothermal Therapy	Nanocarriers for chemo-photothermal therapy suffer from insufficient retention at the tumor site and poor penetration into tumor parenchyma.
March 30, 2020	Biologically Responsive Plasmonic Assemblies for Second Near-Infrared Window Photoacoustic Imaging-Guided Concurrent Chemo-Immunotherapy	We developed dual biologically responsive nanogapped gold nanoparticle vesicles loaded with immune inhibitor and carrying an anticancer polymeric prod
March 01, 2020	Bimetallic nanodots for tri-modal CT/MRI/PA imaging and hypoxia-resistant thermoradiotherapy in the NIR-II biological windows	Hypoxic tumor microenvironment leads to resistance or failure of radiotherapy (RT).
March 01, 2020	Biodegradable CoS₂ nanoclusters for photothermal-enhanced chemodynamic therapy	Retaining in tumors for cancer diagnosis/treatment with sequential elimination from body is crucial to the clinical translation of inorganic medicamen
March 01, 2020	Cathodic protected Mn²⁺ by Na_xWO₃ nanorods for stable magnetic resonance imaging-guided tumor photothermal therapy	The stability and safety of magnetic resonance imaging (MRI) contrast agents (CAs) are crucial for accurate diagnosis and real-time monitor of tumor d
February 01, 2020	Dual-stimuli responsive nanotheranostics for mild hyperthermia enhanced inhibition of Wnt/β-catenin signaling	Wnt/ β -catenin signaling cascade is highly associated with tumorigenesis and progression of various cancers.
February 01, 2020	Dynamic tracking of bulk nanobubbles from microbubbles shrinkage to collapse	Nanobubbles (NBs) have attracted great attention because of their potential role in interfacial science and application.
February 01, 2020	Photomagnetic Prussian blue nanocubes: Synthesis, characterization, and biomedical applications	Nanoparticles play an important role in biomedicine.
January 01, 2020	Dynamic solid-state ultrasound contrast agent for monitoring pH fluctuations in vivo .	The key challenge for in vivo biosensing is to design biomarker-responsive contrast agents that can be readily detected and monitored by broadly avail
January 01, 2020	Biodegradable Bi₂O₂Se Quantum Dots for Photoacoustic Imaging Guided Cancer Photothermal Therapy	As new 2D layered nanomaterials, Bi ₂ O ₂ Se nanoplates have unique semiconducting properties that can benefit biomedical applications.
January 01, 2020	Conjugation of a Scintillator Complex and Gold Nanorods for Dual-Modal Image-Guided Photothermal and X-ray-Induced Photodynamic Therapy of Tumors	Light-mediated therapy has many unique merits but monotherapy strategies rarely completely inhibit tumor growth because resistance often develops.
January 01, 2020	Phospholipid Oxygen Microbubbles for Image-Guided Therapy	In recent work, oxygen microbubbles (OMB) have been shown to oxygenate hypoxic tumors, increase radio-sensitivity and improve tumor control by radiati

January 01, 2020	Assessment of Metastatic and Reactive Sentinel Lymph Nodes with B7-H3-Targeted Ultrasound Molecular Imaging: A Longitudinal Study in Mouse Models	Purpose: To explore the potential of B7-H3-targeted ultrasound molecular imaging (USMI) for longitudinal assessment and differentiation of metastatic
January 01, 2020	Photoacoustic Imaging-Trackable Magnetic Microswimmers for Pathogenic Bacterial Infection Treatment	Micro/nanorobots have been extensively explored as a tetherless small-scale robotic biodevice to perform minimally invasive interventions in hard-to
January 01, 2020	Biodegradation-Mediated Enzymatic Activity-Tunable Molybdenum Oxide Nanourchins for Tumor-Specific Cascade Catalytic Therapy	Recent advances in nanomedicine have facilitated the development of potent nanomaterials with intrinsic enzyme-like activities (nanozymes) for cancer
January 01, 2020	Carbon-coated FeCo nanoparticles as sensitive magnetic-particle-imaging tracers with photothermal and magnetothermal properties	The low magnetic saturation of iron oxide nanoparticles, which are developed primarily as contrast agents for magnetic resonance imaging, limits the s
January 01, 2020	Efficacy evaluation and mechanism study on inhibition of breast cancer cell growth by multimodal targeted fluorescent nanobubbles carrying AMD070 and ICG	Objective: To construct targeted nanobubbles carrying both small-molecule CXCR4 antagonist AMD070 and light-absorbing material indocyanine green (ICG)
January 01, 2020	Non-Invasive Photoacoustic Imaging of In Vivo Mice with Erythrocyte Derived Optical Nanoparticles to Detect CAD/MI	Coronary artery disease (CAD) causes mortality and morbidity worldwide.
January 01, 2020	Ultra - small Pyropheophorbide - a Nanodots for Near - infrared Fluorescence/Photoacoustic Imaging-guided Photodynamic Therapy	Rationale: Nanoparticles (NPs) that are rapidly eliminated from the body offer great potential in clinical test.
January 01, 2020	PEGylated-folic acid-modified black phosphorus quantum dots as near-infrared agents for dual-modality imaging-guided selective cancer cell destruction	Biological systems have high transparency to 700–1100-nm near-infrared (NIR) light.
January 01, 2020	Magnetic targeted near-infrared II PA/MR imaging guided photothermal therapy to trigger cancer immunotherapy	Rationale: Photothermal therapy (PTT) alone is easy to cause cancer recurrence and fail to completely resist metastasis, yet recurrence and metastasis
January 01, 2020	Biodegradable rare earth fluorochloride nanocrystals for phototheranostics	Rare earth (RE) doped inorganic nanocrystals have been demonstrated as efficient contrast agents for deep tissue shortwave-infrared (SWIR) imaging wit
January 01, 2020	Near-Infrared Light-Responsive Nitric Oxide Delivery Platform for Enhanced Radioimmunotherapy	Radiotherapy (RT) is a widely used way for cancer treatment.
January 01, 2020	Transcranial Photoacoustic Detection of Blood-Brain Barrier Disruption Following Focused Ultrasound-Mediated Nanoparticle Delivery	Purpose: Blood-brain barrier disruption (BBBD) is of interest for treating neurodegenerative diseases and tumors by enhancing drug delivery.
January 01, 2020	Microvascular Ultrasonic Imaging of Angiogenesis Identifies Tumors in a Murine Spontaneous Breast Cancer Model	The purpose of this study is to determine if microvascular tortuosity can be used as an imaging biomarker for the presence of tumor-associated angiogenesis
January 01, 2020	Tumor-Specific Endogenous Fe II -Activated, MRI-Guided Self-Targeting Gadolinium-Coordinated Theranostic Nanoplatfoms for Amplification of ROS and Enhanced Chemodynamic Chemotherapy	Low drug payload and lack of tumor-targeting for chemodynamic therapy (CDT) result in an insufficient reactive oxygen species (ROS) generation, which
January 01, 2020	Light-activated gold nanorod vesicles with NIR-II fluorescence and photoacoustic imaging performances for cancer theranostics	Fluorescence (FL) and photoacoustic (PA) imaging in the second near infrared window (NIR-II FL and NIR-II PA) hold great promise for biomedical applic
January 01, 2020	Evaluation of ductal carcinoma in situ grade via triple-modal molecular imaging of B7-H3 expression	Ductal carcinoma in situ (DCIS) will account for 62,930 cases of breast cancer in 2019.

January 01, 2020	NIR/ROS Responsive Black Phosphorus QD Vesicles as Immuno-Adjuvant Carrier for Specific Cancer Photodynamic Immunotherapy	2D black phosphorus (BP) nanosheets and BP quantum dots (BPQD), as two main material styles of BP, are widely used in the biomedical field.
January 01, 2020	Pickering Bubbles as Dual-Modality Ultrasound and Photoacoustic Contrast Agents	Microbubbles (MBs) stabilized by particle surfactants (i.e., Pickering bubbles) have better thermodynamic stability compared to MBs stabilized by small
January 01, 2020	Glucose Oxidase-Instructed Traceable Self-Oxygenation/Hyperthermia Dually Enhanced Cancer Starvation Therapy	Cancer theranostics based on glucose oxidase (GOx)-induced starvation therapy has got more and more attention in cancer management.
January 01, 2020	GSH Depleted PtCu 3 Nanocages for Chemodynamic Enhanced Sonodynamic Cancer Therapy	The ultrahigh concentration of glutathione (GSH) inside tumors destroys reactive oxygen species (ROS) based therapy, improving the outcome of chemodyn
January 01, 2020	Ultrasound/Optical Dual Modality Imaging for Evaluation of Vulnerable Atherosclerotic Plaques with Osteopontin Targeted Nanoparticles	Because of the high mortality of coronary atherosclerotic heart diseases, it is necessary to develop novel early detection methods for vulnerable atherosclerotic
January 01, 2020	Coordination-induced exfoliation to monolayer Bi-anchored MnB 2 nanosheets for multimodal imaging-guided photothermal therapy of cancer	Background: Rapid advance in biomedicine has recently vitalized the development of multifunctional two-dimensional (2D) nanomaterials for cancer therapy
January 01, 2020	Novel Multifunctional Nanoagent for Visual Chemo/Photothermal Therapy of Metastatic Lymph Nodes via Lymphatic Delivery	Breast cancer is one of the major diseases that threaten women's health.
January 01, 2020	Effects of Freezing on Mesenchymal Stem Cells Labeled with Gold Nanoparticles	Stem cell therapies are a promising treatment for many patients suffering from diseases with poor prognosis.
January 01, 2020	Molecular Engineered Squaraine Nanoprobe for NIR-II/Photoacoustic Imaging and Photothermal Therapy of Metastatic Breast Cancer	Various squaraine dyes have been developed for biological imaging.
January 01, 2020	Unique spectral signature of human cutaneous squamous cell carcinoma by photoacoustic imaging	Cutaneous squamous cell carcinoma (cSCC) is a common skin cancer with metastatic potential.
January 01, 2020	Molecular imaging of advanced atherosclerotic plaques with folate receptor-targeted 2D nanoprobe	Vulnerable atherosclerotic plaques are responsible for most cardiovascular diseases (CVDs).
January 01, 2020	Multifunctional Nanoparticles for Multimodal Imaging-Guided Low-Intensity Focused Ultrasound/Immunosynergistic Retinoblastoma Therapy	Retinoblastoma (RB) is prone to delayed diagnosis or treatment and has an increased likelihood of metastasizing.
January 01, 2020	Tumor Microenvironment Adaptable Nanoplatfor for O₂ Self Sufficient Chemo/Photodynamic Combination Therapy	Malignant proliferation of tumor cells induces abnormal tissue microenvironments, leading to therapeutic resistance and poor therapeutic outcome.
January 01, 2020	Gold Nanoframeworks with Mesopores for Raman-Photoacoustic Imaging and Photo Chemo Tumor Therapy in the Second Near Infrared Biowindow	Gold-based nanostructures with tunable wavelength of localized surface plasmon resonance (LSPR) in the second near-infrared (NIR-II) biowindow receive
January 01, 2020	"All-in-One" Silver Nanoprism Platform for Targeted Tumor Theranostics	Designing a multifunctional theranostic nanoplatfor with optional therapeutic strategies is highly desirable to select the most suitable therapeuti
January 01, 2020	Anti-G250 nanobody-functionalized nanobubbles targeting renal cell carcinoma cells for ultrasound molecular imaging	Traditional imaging examinations have difficulty in identifying benign and malignant changes in renal masses.

January 01, 2020	Photoacoustic Imaging Quantifies Drug Release from Nanocarriers via Redox Chemistry of Dye Labeled Cargo	We report a new approach to monitor drug release from nanocarriers via a paclitaxel–methylene blue conjugate (PTX-MB) with redox activity.
June 01, 2019	A near-infrared turn-on probe for in vivo chemoselective photoacoustic detection of fluoride ion	The detection of fluoride ion (F ⁻) in living subjects is of value for healthcare and environmental fields.
March 01, 2019	Multifunctional nanoplatform for photoacoustic imaging-guided combined therapy enhanced by CO induced ferroptosis	A multifunctional CO/thermo/chemotherapy nanoplatform is here reported, which is composed of mesoporous carbon nanoparticles (MCN) as near infrared (N
February 01, 2019	Erythrocyte-cancer hybrid membrane-camouflaged melanin nanoparticles for enhancing photothermal therapy efficacy in tumors	Cell membrane coating has emerged as an intriguing biomimetic strategy to endow nanomaterials with functions and properties inherent to source cells f
February 01, 2019	Recent strategies on targeted delivery of thrombolytics	Thrombus formed in blood vessel is a progressive process, which would lead to life-threatening thrombotic diseases such as ischemic stroke.
February 01, 2019	Functionalized polymer microbubbles as new molecular ultrasound contrast agent to target P-selectin in thrombus	Thrombotic diseases rarely cause symptoms until advanced stage and sudden death.
January 01, 2019	Development of a Human Photoacoustic Imaging Reporter Gene Using the Clinical Dye Indocyanine Green	Purpose: To develop a photoacoustic imaging (PAI) reporter gene that has high translational potential.
January 01, 2019	SDF-1-loaded PLGA nanoparticles for the targeted photoacoustic imaging and photothermal therapy of metastatic lymph nodes in tongue squamous cell carcinoma	The combination of photothermal therapy and targeted chemotherapy can produce much greater cytotoxicity than chemotherapy.
January 01, 2019	Silicon carbide nanoparticles as a photoacoustic and photoluminescent dual-imaging contrast agent for long-term cell tracking	Silicon carbide nanoparticles (SiCNPs) are durable, physically resilient, chemically inert, and biocompatible.
January 01, 2019	pH/NIR-responsive semiconducting polymer nanoparticles for highly effective photoacoustic image guided chemo-photothermal synergistic therapy	ABSTRACT Multifunctional drug delivery nanoplatform (PDPP3T@PSNiAA NPs) based on NIR absorbing semiconducting polymer nanoparticles for pH/NIR light-
January 01, 2019	Bioinspired lipoproteins-mediated photothermia remodels tumor stroma to improve cancer cell accessibility of second nanoparticles	The tumor stromal microenvironments (TSM) including stromal cells and extracellular matrix (ECM) form an abominable barrier hampering nanoparticles ac
January 01, 2019	Indocyanine Green–Coated Gold Nanoclusters for Photoacoustic Imaging and Photothermal Therapy	Abstract Traditional oncology treatment modalities are often associated with a poor therapeutic index.
January 01, 2019	Mussel-inspired functionalization of semiconducting polymer nanoparticles for amplified photoacoustic imaging and photothermal therapy	A versatile and straightforward strategy for the encapsulation of semiconducting polymer nanoparticles (SPNs) using biocompatible polydopamine (PDA) a
January 01, 2019	New Strategy for Specific Eradication of Implant-Related Infections Based on Special and Selective Degradability of Rhenium Trioxide Nanocubes	The greatest bottleneck for photothermal antibacterial therapy could be the difficulty in heating the infection site directly and specifically to evad
January 01, 2019	In Vivo Photoacoustic Tracking of Mesenchymal Stem Cell Viability	Adult stem cell therapy has demonstrated improved outcomes for treating cardiovascular diseases in preclinical trials.
January 01, 2019	Platelet-Mimicking Biotaxis Targeting Vasculature-Disrupted Tumors for Cascade Amplification of Hypoxia-Sensitive Therapy	Tumorous vasculature plays key roles in sustaining tumor growth.

January 01, 2019	Ultrasound-Responsive Conversion of Microbubbles to Nanoparticles to Enable Background-Free in Vivo Photoacoustic Imaging	Photoacoustic (PA) imaging based on the photon-to-ultrasound conversion allows the imaging of optical absorbers in deep tissues with high spatial reso
January 01, 2019	Polyethyleneimine-assisted one-pot synthesis of quasi-fractal plasmonic gold nanocompo-sites as a photothermal theranostic agent	Gold nanoparticles have been thoroughly used in designing thermal ablative therapies and photoacoustic imaging for cancer owing to their unique and tu
January 01, 2019	Porphyrin–palladium hydride MOF nanoparticles for tumor-targeting photoacoustic imaging-guided hydrogenothermal cancer therapy	Hydrogen gas, which is an important energy resource, was recently discovered to have high advantage in the treatment of many diseases, but the current
December 21, 2018	Ratiometric Photoacoustic Nanoprobe for Bioimaging of Cu²⁺	Aberrant copper content implicates numerous diseases including Alzheimer's disease and Wilson's disease.
December 16, 2018	Improving Stem Cell Delivery to the Trabecular Meshwork Using Magnetic Nanoparticles	Glaucoma is a major cause of blindness and is frequently associated with elevated intraocular pressure.
December 14, 2018	Intrinsically absorbing photoacoustic and ultrasound contrast agents for cancer therapy and imaging	Nanoparticles are submicrometer in size and are used in a variety of ways in the biomedical field.
December 12, 2018	Chemodrug-Gated Biodegradable Hollow Mesoporous Organosilica Nanotheranostics for Multimodal Imaging-Guided Low-Temperature Photothermal Therapy/Chemotherapy of Cancer	Noninvasive physical treatment with relatively low intensity stimulation and the development of highly efficient anticancer medical strategy are still
November 24, 2018	Indocyanine Green labeling for optical and photoacoustic imaging of Mesenchymal Stem Cells after in vivo transplantation	The transplantation of Mesenchymal Stem Cells (MSCs) holds great promise for the treatment of a plethora of human diseases, but new non-invasive proce
October 18, 2018	In Vivo Molecular Ultrasound Assessment of Glioblastoma Neovasculature with Endoglin-Targeted Microbubbles	Objectives . Glioblastoma, as one of the most malignant cancer in the world, usually shows substantially increased angiogenesis.
October 17, 2018	In vivo photoacoustic difference-spectra imaging of bacteria using photoswitchable chromoproteins	Photoacoustic (PA) imaging offers great promise for deep molecular imaging of optical reporters but has difficulties in imaging multiple molecular pro
May 29, 2018	Performances of a Pristine Graphene-Microbubble Hybrid Construct as Dual Imaging Contrast Agent and Assessment of Its Biodistribution by Photoacoustic Imaging	Coupling near-infrared (NIR) nanoscale absorbing materials with microbubbles (MBs) can generate a multifunctional dual imaging contrast agent.
May 01, 2018	Histidine-rich glycoprotein-induced vascular normalization improves EPR-mediated drug targeting to and into tumors	Tumors are characterized by leaky blood vessels, and by an abnormal and heterogeneous vascular network.
January 01, 2018	Multispectral Photoacoustic Imaging of Tumor Protease Activity with a Gold Nanocage-Based Activatable Probe	Tumor proteases have been recognized as significant regulators in the tumor microenvironment, but the current strategies for in vivo protease imaging
January 01, 2018	Endoglin targeted contrast enhanced ultrasound imaging in hepatoblastoma xenografts	Angiogenesis is required for the growth of hepatoblastoma (HB).
January 01, 2018	Facile fabrication of highly photothermal-effective albumin-assisted gold nanoclusters for treating breast cancer	Gold nanoclusters (AuNCs) have been considered to be a promising candidate for hyperthermia-based anticancer therapy.
January 01, 2018	Development and evaluation of a CEACAM6-targeting theranostic nanomedicine for photoacoustic-based diagnosis and chemotherapy of metastatic cancer	Metastasis is the leading cause of cancer-related deaths.

January 01, 2018	A Spectral Fiedler Field-based Contrast Platform for Imaging of Nanoparticles in Colon Tumor	In efforts to improve solid tumor imaging, and enable image-guided drug delivery (IGDD), multiple types of clinical imaging modalities have been combi
January 01, 2018	[ASAP] Gadolinium Metallofullerene-Polypyrrole Nanoparticles for Activatable Dual-Modal Imaging-Guided Photothermal Therapy	Accurate diagnosis of tumor is promising to guide photothermal therapy (PTT) for efficacious tumor ablation with minimal damage to healthy tissues.
January 01, 2018	Photoacoustic imaging of integrin-overexpressing tumors using a novel ICG-based contrast agent in mice	PhotoAcoustic Imaging (PAI) is a biomedical imaging modality currently under evaluation in preclinical and clinical settings.
January 01, 2018	A catalase-loaded hierarchical zeolite as an implantable nanocapsule for ultrasound-guided oxygen self-sufficient photodynamic therapy against pancreatic cancer	Photodynamic therapy (PDT) is an alternative strategy for treating pancreatic cancer (PC) in clinics.
January 01, 2018	Wulff in a cage gold nanoparticles as contrast agents for computed tomography and photoacoustic imaging	A core-shell nanostructure yields balanced contrast production for both CT and photoacoustics.
January 01, 2018	Thy1-Targeted Microbubbles for Ultrasound Molecular Imaging of Pancreatic Ductal Adenocarcinoma	Purpose: To engineer a dual human and murine Thy1-binding single-chain-antibody ligand (Thy1-scFv) for contrast microbubble-enhanced ultrasound mole
January 01, 2018	Ultrasound molecular imaging as a non-invasive companion diagnostic for netrin-1 interference therapy in breast cancer	In ultrasound molecular imaging (USMI), ligand-functionalized microbubbles (MBs) are used to visualize vascular endothelial targets.
January 01, 2018	Mesopore-Induced Aggregation of Cobalt Protoporphyrin for Photoacoustic Imaging and Antioxidant Protection of Stem Cells	With the ever accelerating development of functional materials design and fabrication, various nanomaterial based molecular imaging platforms with imp
January 01, 2018	Unfavorable effect of calcitriol and its low-calcemic analogs on metastasis of 4T1 mouse mammary gland cancer	Low vitamin D status is considered as a risk factor for breast cancer and has prognostic significance.
December 01, 2017	Contrast enhanced ultrasound imaging can predict vascular-targeted photodynamic therapy induced tumor necrosis in small animals	Aims To evaluate the accuracy of contrast-enhanced ultrasound (CEUS) for monitoring tumor necrosis following WST-11 vascular targeted photodynamic the
August 01, 2017	Measuring Absolute Blood Perfusion in Mice Using Dynamic Contrast-Enhanced Ultrasound	We investigated the feasibility of estimating absolute tissue blood perfusion using dynamic contrast-enhanced ultrasound (CEUS) imaging in mice.
May 30, 2017	Preparation and characterization of a novel silicon-modified nanobubble	Nanobubbles (NBs) opened a new field of ultrasound imaging. There is still no practical method to control the diameter of bubbles.
May 04, 2017	Development of prostate specific membrane antigen targeted ultrasound microbubbles using bioorthogonal chemistry	Prostate specific membrane antigen (PSMA) targeted microbubbles (MBs) were developed using bioorthogonal chemistry.
March 01, 2017	Molecular Contrast-Enhanced Ultrasound Imaging of Radiation-Induced P-Selectin Expression in Healthy Mice Colon	Purpose To evaluate the feasibility of using molecular contrast-enhanced ultrasound (mCEUS) to image radiation (XRT)-induced expression of cell adhesi
February 28, 2017	Magnetic Nanoliposomes as in Situ Microbubble Bombers for Multimodality Image-Guided Cancer Theranostics	Nanosized drug delivery systems have offered promising approaches for cancer theranostics.
January 20, 2017	Core-shell and co-doped nanoscale metal-organic particles (NMOPs) obtained via post-synthesis cation exchange for multimodal imaging and synergistic thermo-radiotherapy	Nanoscale metal-organic particles (NMOPs) have recently shown great promise in the area of nanomedicine owing to their tunable compositions, highly en

January 01, 2016	Image-Guided Hydrogen Gas Delivery for Protection from Myocardial Ischemia-Reperfusion Injury via Microbubbles	Cardiomyocyte death induced by ischemia-reperfusion is a major cause of morbidity and mortality worldwide.
January 01, 2016	PBCA-based polymeric microbubbles for molecular imaging and drug delivery	Microbubbles (MB) are routinely used as contrast agents for ultrasound (US) imaging.
January 01, 2016	A Theranostic Nanoplatfrom: Triple-Model Imaging Guided Synergistic Cancer Therapy Based on Liposomes Conjugated Mesoporous Silica Nanoparticles	Mesoporous silica nanoparticles (MSNs) have long since been investigated to provide a versatile drug-delivery platform due to their multitudinous meri
January 01, 2016	Detection and characterization of murine colitis and carcinogenesis by molecularly targeted contrast-enhanced ultrasound	AIM To study mucosal addressin cellular adhesion molecule-1 (MAdCAM-1) and vascular endothelial growth factor (VEGF)-targeted contrast enhanced ultras
January 01, 2016	Nanoscale covalent organic polymers as a biodegradable nanomedicine for chemotherapy-enhanced photodynamic therapy of cancer	Recently, covalent-organic polymers (COPs), which covalently cross-link different types of organic molecules to form organic network structures, have
January 01, 2016	Molecularly Engineered Theranostic Nanoparticles for Thrombosed Vessels: H2O2-Activatable Contrast-Enhanced Photoacoustic Imaging and Antithrombotic Therapy	A thrombus (blood clot), composed mainly of activated platelets and fibrin, obstructs arteries or veins, leading to various life-threatening diseases.
January 01, 2016	Highly versatile SPION encapsulated PLGA nanoparticles as photothermal ablaters of cancer cells and as multimodal imaging agents	We have designed versatile polymeric nanoparticles with cancer cell specific targeting capabilities via aptamer conjugation after the successful encap
January 01, 2016	Tumor vasculature normalization by orally fed erlotinib to modulate the tumor microenvironment for enhanced cancer nanomedicine and immunotherapy	The abnormal tumor vasculature is one of key reasons that lead to the limited tumor perfusion as well as hypoxic and immunosuppressive tumor microenvi
January 01, 2016	Photoacoustic Imaging of Human Mesenchymal Stem Cells Labeled with Prussian Blue–Poly(L-lysine) Nanocomplexes	Acoustic imaging is affordable and accessible without ionizing radiation.
January 01, 2016	Tumor Microenvironment Modulation by Cyclopamine Improved Photothermal Therapy of Biomimetic Gold Nanorods for Pancreatic Ductal Adenocarcinomas	Due to the rich stroma content and poor blood perfusion, pancreatic ductal adenocarcinoma (PDA) is a tough cancer that can hardly be effectively treat
January 01, 2016	Exosome-like silica nanoparticles: a novel ultrasound contrast agent for stem cell imaging	Ultrasound is critical in many areas of medicine including obstetrics, oncology, and cardiology with emerging applications in regenerative medicine.
January 01, 2016	Proteoglycan-targeting applied to hypoxia-activated prodrug therapy in chondrosarcoma: first proof-of-concept	Due to its abundant chondrogenic matrix and hypoxic tissue, chondrosarcoma is chemo- and radio-resistant.
January 01, 2016	Cationic microbubbles and antibiotic-free miniplasmid for sustained ultrasound – mediated transgene expression in liver	Despite the increasing number of clinical trials in gene therapy, no ideal methods still allow non-viral gene transfer in deep tissues such as the liv
January 01, 2016	Nilotinib Enhances Tumor Angiogenesis and Counteracts VEGFR2 Blockade in an Orthotopic Breast Cancer Xenograft Model with Desmoplastic Response	Vascular endothelial growth factor (VEGF)/VEGF receptor (VEGFR)-targeted therapies predominantly affect nascent, immature tumor vessels.
January 01, 2016	Photoacoustic imaging of lymphatic pumping	The lymphatic system is crucial for maintaining fluid balance in tissues and for immune cell trafficking; however, there are only a few methods for im
September 01, 2016	Quantification of Endothelial $\alpha v \beta 3$ Expression with High-Frequency Ultrasound and Targeted Microbubbles: In Vitro and In Vivo Studies	Angiogenesis is a critical feature of plaque development in atherosclerosis and might play a key role in both the initiation and later rupture of plaq

June 29, 2016	Graphene Meets Microbubbles: A Superior Contrast Agent for Photoacoustic Imaging	Coupling graphene with a soft polymer surface offers the possibility to build hybrid constructs with new electrical, optical, and mechanical properties
June 08, 2016	Gold Nanoparticle Coated Carbon Nanotube Ring with Enhanced Raman Scattering and Photothermal Conversion Property for Theranostic Applications	We report a new type of carbon nanotube ring (CNTR) coated with gold nanoparticles (CNTR@AuNPs) using CNTR as a template and surface attached redox-ac
June 01, 2016	High-resolution renal perfusion mapping using contrast-enhanced ultrasonography in ischemia-reperfusion injury monitors changes in renal microperfusion	Alterations in renal microperfusion play an important role in the development of acute kidney injury with long-term consequences.
January 01, 2015	Plasmonic fluorescent CdSe/Cu₂S hybrid nanocrystals for multichannel imaging and cancer directed photo-thermal therapy	A simple, crude <i>Jatropha curcas</i> (JC) oil-based synthesis approach, devoid of any toxic phosphine and pyrophoric ligands, to produce size and shape tun
January 01, 2015	Long circulating reduced graphene oxide-iron oxide nanoparticles for efficient tumor targeting and multimodality imaging	Polyethylene glycol (PEG) surface modification is one of the most widely used approaches to improve the solubility of inorganic nanoparticles, prevent
January 01, 2015	Porphyrin Nanodroplets: Sub-micrometer Ultrasound and Photoacoustic Contrast Imaging Agents	Ultrasound offers significant potential as a molecular imaging modality when imaging microbubble agents owing to single-bubble sensitivity.
January 01, 2015	Dual-enhanced photothermal conversion properties of reduced graphene oxide-coated gold superparticles for light-triggered acoustic and thermal theranostics	A rational design of highly efficient photothermal agents that possess excellent light-to-heat conversion properties is a fascinating topic in nanotechnology
January 01, 2015	Exploring Targeted Contrast-Enhanced Ultrasound to Detect Neural Inflammation: An Example of Standard Nomenclature	Targeted contrast-enhanced ultrasound (TCEUS) is an innovative method of molecular imaging used for detection of inflammatory biomarkers in vivo.
January 01, 2015	Ultrasound-guided photoacoustic imaging for the selective detection of EGFR-expressing breast cancer and lymph node metastases	We assessed the use of ultrasound (US)-guided photoacoustic imaging (PAI) and anti-EGFR antibody-conjugated gold nanorods (anti-EGFR-GNs) to non-invasive
January 01, 2015	Accelerated Blood Clearance Phenomenon Reduces the Passive Targeting of PEGylated Nanoparticles in Peripheral Arterial Disease	Peripheral arterial disease (PAD) is a leading global health concern.
January 01, 2015	Re-assessing the enhanced permeability and retention effect in peripheral arterial disease using radiolabeled long circulating nanoparticles	Abstract As peripheral arterial disease (PAD) results in muscle ischemia and neovascularization, it has been claimed that nanoparticles can passively
January 01, 2015	Stable J-aggregation enabled dual photoacoustic and fluorescence nanoparticles for intraoperative cancer imaging	J-aggregates display nanoscale optical properties which enable their use in fluorescence and photo-acoustic imaging applications.
January 01, 2015	Chlorosome-Inspired Synthesis of Templated Metallochlorin-Lipid Nanoassemblies for Biomedical Applications	Chlorosomes are vesicular light-harvesting organelles found in photosynthetic green sulfur bacteria.
October 21, 2015	Validating tyrosinase homologue melA as a photoacoustic reporter gene for imaging Escherichia coli	To understand the pathogenic processes for infectious bacteria, appropriate research tools are required for replicating and characterizing infections.
September 22, 2015	Sequential Drug Release and Enhanced Photothermal and Photoacoustic Effect of Hybrid Reduced Graphene Oxide-Loaded Ultrasmall Gold Nanorod Vesicles for Cancer Therapy	We report a hybrid reduced graphene oxide (rGO)-loaded ultrasmall plasmonic gold nanorod vesicle (rGO-AuNRVes) (~65 nm in size) with remarkably amplified

June 23, 2015	Determination of biodistribution of ultrasmall, near-infrared emitting gold nanoparticles by photoacoustic and fluorescence imaging	This study compares fluorescence and photoacoustic (PA) imaging of ex vivo tumors and organs from tumor-bearing mice injected intravenously with ultra
June 15, 2015	Breast Cancer Detection by B7-H3-Targeted Ultrasound Molecular Imaging	Ultrasound is a complimentary imaging modality to mammography in breast cancer detection in particular in patients with dense breast tissue, but is li
June 01, 2015	Quantification of bound microbubbles in ultrasound molecular imaging	Molecular markers associated with diseases can be visualized and quantified noninvasively with targeted ultrasound contrast agent (t-UCA) consisting o
March 17, 2015	2H,3H-Decafluoropentane-Based Nanodroplets: New Perspectives for Oxygen Delivery to Hypoxic Cutaneous Tissues	Perfluoropentane (PFP)-based oxygen-loaded nanobubbles (OLNBs) were previously proposed as adjuvant therapeutic tools for pathologies of different e
March 01, 2015	Vascular Endothelial Growth Factor Receptor Type 2–targeted Contrast-enhanced US of Pancreatic Cancer Neovasculature in a Genetically Engineered Mouse Model: Potential for Earlier Detection	PURPOSE: To test ultrasonographic (US) imaging with vascular endothelial growth factor receptor type 2 (VEGFR2)-targeted microbubble contrast material
January 01, 2015	Protein-based photothermal theranostics for imaging-guided cancer therapy	The development of imageable photothermal theranostics has attracted considerable attention for imaging guided photothermal therapy (PTT) with high tu
January 01, 2015	Nanoparticle Probes for Structural and Functional Photoacoustic Molecular Tomography	Nowadays, nanoparticle probes have received extensive attention largely due to its potential biomedical applications in structural, functional, and mo
January 01, 2015	Design of hybrid MnO₂-polymer-lipid nanoparticles with tunable oxygen generation rates and tumor accumulation for cancer treatment	Manganese dioxide (MnO ₂) nanoparticles (NPs) were discovered in previous work to be effective in improving tumor oxygenation (hypoxia) and reducing
January 01, 2015	Multi-stimuli responsive Cu₂S nanocrystals as trimodal imaging and synergistic chemo-photothermal therapy agents	A size and shape tuned, multifunctional metal chalcogenide, Cu ₂ S-based nanotheranostic agent is deve- loped for trimodal imaging and multimodal therap
January 01, 2015	Subharmonic, non-linear fundamental and ultraharmonic imaging of microbubble contrast at high frequencies.	There is increasing use of ultrasound contrast agent in high-frequency ultrasound imaging.
January 01, 2015	Phototheranostic Porphyrin Nanoparticles Enable Visualization and Targeted Treatment of Head and Neck Cancer in Clinically Relevant Models	Head and neck cancer is the fifth most common type of cancer worldwide and remains challenging for effective treatment due to the proximity to critica
January 01, 2015	Ultrasound Molecular Imaging of Vascular Endothelial Growth Factor Receptor 2 Expression for Endometrial Receptivity Evaluation	Purpose: Ultrasound (US) molecular imaging by examining the expression\nof vascular endothelial growth factor receptor 2 (VEGFR2) on uterus\nvascular
October 29, 2014	Transferring Biomarker into Molecular Probe: Melanin Nanoparticle as a Naturally Active Platform for Multimodality Imaging	Developing multifunctional and easily prepared nanoplatfoms with integrated different modalities is highly challenging for molecular imaging.
October 01, 2014	Dye-Loaded Ferritin Nanocages for Multimodal Imaging and Photothermal Therapy	Multimodal imaging-guided photothermal therapy (PTT), for the therapy of cancer, based on a ferritin (FRT) nanocage loaded with the near-infrared dye
October 01, 2014	Sentinel Lymph Node Biopsy Revisited: Ultrasound-Guided Photoacoustic Detection of Micrometastases Using Molecularly Targeted Plasmonic Nanosensors	Metastases rather than primary tumors are responsible for killing most patients with cancer.

September 10, 2014	A dual gold nanoparticle system for mesenchymal stem cell tracking	Stem cell-based therapies have demonstrated improved outcomes in preclinical and clinical trials for treating cardiovascular ischemic diseases.
July 06, 2014	Non-invasive multimodal functional imaging of the intestine with frozen micellar naphthalocyanines	There is a need for safer and improved methods for non-invasive imaging of the gastrointestinal tract.
June 17, 2014	Multi-wavelength photoacoustic imaging of inducible tyrosinase reporter gene expression in xenograft tumors	Photoacoustic imaging is an emerging hybrid imaging technology capable of breaking through resolution limits of pure optical imaging technologies
June 01, 2014	Contrast-enhanced magneto-photo-acoustic imaging in vivo using dual-contrast nanoparticles	By mapping the distribution of targeted plasmonic nanoparticles (NPs), photoacoustic (PA) imaging offers the potential to detect the pathologies in th
June 01, 2014	Comparison of dynamic contrast-enhanced MR, ultrasound and optical imaging modalities to evaluate the antiangiogenic effect of PF-03084014 and sunitinib	Noninvasive imaging has been widely applied for monitoring antiangiogenesis therapy in cancer drug discovery.
April 22, 2014	Multifunctional Albumin-MnO₂ Nanoparticles Modulate Solid Tumor Microenvironment by Attenuating Hypoxia, Acidosis, Vascular Endothelial Growth Factor and Enhance Radiation Response	Insufficient oxygenation (hypoxia), acidic pH (acidosis), and elevated levels of reactive oxygen species (ROS), such as H ₂ O ₂ , are characteristic abnor
April 15, 2014	Exercise performance and peripheral vascular insufficiency improve with AMPK activation in high-fat diet-fed mice	Intermittent claudication is a form of exercise intolerance characterized by muscle pain during walking in patients with peripheral artery disease (PA
March 01, 2014	Ultrasound Molecular Imaging in a Human CD276 Expression-Modulated Murine Ovarian Cancer Model.	PURPOSE: To develop a mouse ovarian cancer model that allows modulating the expression levels of human vascular targets in mouse xenograft tumors and
January 26, 2014	Semiconducting polymer nanoparticles as photoacoustic molecular imaging probes in living mice	Photoacoustic (PA) imaging holds great promise for the visualization of physiology and pathology at the molecular level with deep tissue penetration a
January 01, 2014	Dual In Vivo Photoacoustic and Fluorescence Imaging of Assessment , and Surgical Guidance	Biomarker-specific imaging probes offer ways to improve molecular diagnosis, intraoperative margin assessment, and tumor resection.
January 01, 2014	Active curcumin nanoparticles formed from a volatile microemulsion template	Mitochondria targeted phototherapy, including photodynamic therapy (PDT) and photothermal therapy (PTT), has excelled as an effective approach among o
January 01, 2014	Detection of Melanoma Metastases in Resected Human Lymph Nodes by Noninvasive Multispectral Photoacoustic Imaging	Objective .
November 01, 2013	In vitro and in vivo mapping of drug release after laser ablation thermal therapy with doxorubicin-loaded hollow gold nanoshells using fluorescence and photoacoustic imaging	Doxorubicin-loaded hollow nanoshells (Dox@PEG-HAuNS) increases the efficacy of photothermal ablation (PTA) by not only mediating efficient PTA but als
November 01, 2013	Development and optimization of near-IR contrast agents for immune cell tracking	Gold nanorods (NRs) are attractive for in vivo imaging due to their high optical cross-sections and tunable absorbance.
January 01, 2013	VEGF-loaded graphene oxide as theranostics for multi-modality imaging-monitored targeting therapeutic angiogenesis of ischemic muscle	Herein we report the design and synthesis of multifunctional VEGF-loaded IR800-conjugated graphene oxide (GO-IR800-VEGF) for multi-modality imaging-mo
January 01, 2013	Tyrosinase as a multifunctional reporter gene for Photoacoustic/MRI/PET triple modality molecular imaging.	Development of reporter genes for multimodality molecular imaging is highly important.

January 01, 2013	Bio-ink properties and printability for extrusion printing living cells	Angiogenesis is a common pathological characteristic of many solid tumors and vulnerable atherosclerotic plaques.
November 27, 2012	Gold nanorods for ovarian cancer detection with photoacoustic imaging and resection guidance via Raman imaging in living mice.	Improved imaging approaches are needed for ovarian cancer screening, diagnosis, staging, and resection guidance.
November 01, 2012	Use of ultrasound to assess renal reperfusion and P-selectin expression following unilateral renal ischemia.	Renal ischemia-reperfusion injury is a major cause of acute kidney injury that carries a high mortality rate and increases the risk of later development
May 16, 2012	In vivo Ultrasound and Photoacoustic Monitoring of Mesenchymal Stem Cells Labeled with Gold Nanotracers	Longitudinal monitoring of cells is required in order to understand the role of delivered stem cells in therapeutic neovascularization.
January 10, 2012	Biomedical photoacoustics beyond thermal expansion using triggered nanodroplet vaporization for contrast-enhanced imaging	Since being discovered by Alexander Bell, photoacoustics may again be seeing major resurgence in biomedical imaging.
January 01, 2011	Photoacoustic Imaging of Mesenchymal Stem Cells in Living Mice via Silica-Coated Gold Nanorods	Improved imaging modalities are critically needed for optimizing stem cell therapy.
January 01, 2011	VCAM-1-targeting gold nanoshell probe for photoacoustic imaging of atherosclerotic plaque in mice	The development of molecular probes and novel imaging modalities, allowing better resolution and specificity, is associated with an increased potential
June 01, 2011	In Vivo Targeted Contrast Enhanced Micro-Ultrasound to Measure Intratumor Perfusion and Vascular Endothelial Growth Factor Receptor 2 Expression in a Mouse Orthotopic Bladder Cancer Model	Purpose: We evaluated the feasibility of using targeted contrast enhanced micro-ultrasound imaging to assess intratumor perfusion and vascular endothelium
May 01, 2011	Assessing vesicoureteral reflux in live inbred mice via ultrasound with a microbubble contrast agent	Vesicoureteral reflux (VUR) is a common pediatric anomaly linked to renal scarring and hypertension.
March 01, 2011	Tumor Angiogenic Marker Expression Levels during Tumor Growth: Longitudinal Assessment with Molecularly Targeted Microbubbles and US Imaging	PURPOSE: To evaluate the use of molecularly targeted microbubbles (MBs) and ultrasonography (US) in the noninvasive assessment of the level of expression
November 27, 2010	Ultrasound-assisted non-viral gene transfer to the salivary glands	We report a non-viral gene transfer method utilizing ultrasound induced microbubble destruction to allow the uptake of plasmid gene transfer vectors
March 01, 2010	Targeted contrast-enhanced ultrasound imaging of tumor angiogenesis with contrast microbubbles conjugated to integrin-binding knottin peptides.	UNLABELLED: Targeted contrast-enhanced ultrasound imaging is increasingly being recognized as a powerful imaging tool for the detection and quantification
January 01, 2009	Nonlinear contrast imaging with an array-based micro-ultrasound system	The main goal of this study was to determine the optimal strategy for a real-time nonlinear contrast mode for small-animal imaging at high frequency
January 01, 1990	Biosynthesis of lipid A in Escherichia coli: Acyl carrier protein-dependent incorporation of laurate and myristate	In previous studies we described enzyme(s) from Escherichia coli that transfer two 3-deoxy-D-manno-octulosonate (KDO) residues from two CMP-KDO molecules