

March 07, 2022	Photoacoustic properties of polypyrrole nanoparticles	Photoacoustic imaging, an emerging modality, provides supplemental information to ultrasound imaging.
October 20, 2020	Modulation of vascular response after injury in the rat Achilles tendon alters healing capacity	Tendons are relatively hypovascular but become hypervascular during both injury and degeneration.
October 19, 2020	Contrast-Enhanced Multispectral Photoacoustic Imaging for Irregular Hepatectomy Navigation: A Pilot Study	Irregular hepatectomy plays a prominent role in the treatment of small hepatocellular carcinoma (HCC) patients with severe cirrhosis and localized liv
October 16, 2020	Clinically-applicable perfluorocarbon-loaded nanoparticles for in vivo photoacoustic, 19f magnetic resonance and fluorescent imaging	Photoacoustic imaging (PAI) is an emerging biomedical imaging technique that is now coming to the clinic.
September 09, 2020	Tetrazine-Derived Near-Infrared Dye as a Facile Reagent for Developing Targeted Photoacoustic Imaging Agents	A new photoacoustic (PA) dye was developed as a simple-to-use reagent for creating targeted PA imaging agents.
May 18, 2020	Silicon carbide nanoparticles as a photoacoustic and photoluminescent dual-imaging contrast agent for long-term cell tracking	Silicon carbide nanoparticles are capable of long-term tracking of mesenchymal stem cells through both photoluminescence and photoacoustic imaging.
April 30, 2020	Photoacoustic imaging of kidney fibrosis for assessing pretransplant organ quality	Roughly 10% of the world's population has chronic kidney disease (CKD).
March 30, 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
March 11, 2020	Maltotriose-based probes for fluorescence and photoacoustic imaging of bacterial infections	Currently, there are no non-invasive tools to accurately diagnose wound and surgical site infections before they become systemic or cause significant a
January 01, 2020	Imaging-based vascular-related biomarkers for early detection of acetaminophen-induced liver injury	Acetaminophen (APAP) is the foremost cause of drug-induced liver injury in the Western world.
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	pH-Responsive Nanoprobe for In Vivo Photoacoustic Imaging of Gastric Acid	In vivo real-time monitoring gastric acid is of great importance for diagnosis and treatment of gastrointestinal diseases.
January 01, 2019	Label-free Visualization of Early Cancer Hepatic Micrometastasis and Intraoperative Image-guided Surgery by Photoacoustic Imaging	Objectives: The detection of cancer micrometastasis for early diagnosis and treatment poses a great challenge for conventional imaging techniques.
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, 2018	Real-Time in Vivo Photoacoustic Imaging in the Assessment of Myocardial Dynamics in Murine Model of Myocardial Ischemia	Photoacoustic imaging (PAI) is an evolving real-time imaging modality that combines the higher contrast of optical imaging with the higher spatial res
November 01, 2017	Exploration of melanoma metastases in mice brains using endogenous contrast photoacoustic imaging	Photoacoustic imaging (PAI) provides real time non-invasive and contrast agent free monitoring of some endogenous compounds concentrations that provid
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
March 07, 2022	PEGylated Indium Nanoparticles: A Metallic Contrast Agent for Multiwavelength Photoacoustic Imaging and Second Near-Infrared Photothermal Therapy	Indium, a low melting point metal, is well-known for constructing eutectic gallium-indium liquid metal.
March 07, 2022	Catalase Nanocrystals Loaded with Methylene Blue as Oxygen Self-Supplied, Imaging-Guided Platform for Photodynamic Therapy of Hypoxic Tumors	Photodynamic therapy (PDT) is a well-known method for cancer therapy in the clinic.
March 07, 2022	Ultrasmall gold nanorod-polydopamine hybrids for enhanced photoacoustic imaging and photothermal therapy in second near-infrared window	Gold nanorods (GNRs) have attracted great interest for photo-mediated biomedicines due to their tunable and high optical absorption, high photothermal
March 07, 2022	iRGD Peptide-Mediated Liposomal Nanoparticles with Photoacoustic/Ultrasound Dual-Modality Imaging for Precision Theranostics Against Hepatocellular Carcinoma	Purpose: Prepare a multifunctional ultrasound molecular probe, cell-penetrating peptide-modified 10-hydroxycamptothecin-loaded phase-transformation li
March 01, 2022	Prussian blue-based theranostics for ameliorating acute kidney injury	Background: Acute kidney injury (AKI) with high mortality rates is associated with an excess of reactive oxygen/nitrogen species (RONS) within kidney
November 02, 2021	A novel neuroinflammation-responsive hydrogel based on mimicking naked mole rat brain microenvironment retards neurovascular dysfunction and cognitive decline in Alzheimer's disease	Neuroinflammation is one of the major processes that trigger neuropathological amyloid- β ($A\beta$) deposition and contribute to Alzheimer's disease (AD) p
November 02, 2021	Early Detection and Reversal of Cell Apoptosis Induced by Focused Ultrasound-Mediated Blood-Brain Barrier Opening	Focused ultrasound (FUS) combined with microbubbles (MBs) has recently emerged as a potential approach to open the blood-brain barrier (BBB) for deliv
November 02, 2021	Photoacoustic image-guided corpus cavernosum intratunical injection of adipose stem cell-derived exosomes loaded polydopamine thermosensitive hydrogel for erectile dysfunction treatment	Stem cell-derived exosomes (SC-EXO) was an emerging therapeutic agent in regenerative medicine.
November 02, 2021	Dual Ultrasound and Photoacoustic Tracking of Magnetically Driven Micromotors: From In Vitro to In Vivo	The fast evolution of medical micro- and nanorobots in the endeavor to perform non-invasive medical operations in living organisms has boosted the use
October 19, 2021	Mn(II)-directed dual-photosensitizers co-assemblies for multimodal imaging-guided self-enhanced phototherapy	Phototherapy has attracted increasing attention in cancer therapy owing to its non-invasive nature, high spatiotemporal selectivity, and negligible si

October 19, 2021	Multifunctional nanozyme for multimodal imaging-guided enhanced sonodynamic therapy by regulating the tumor microenvironment	Sonodynamic therapy (SDT) is a highly promising approach for cancer therapy, but its efficacy is severely hampered by the low specificity of sonosensi
October 18, 2021	Theragnostic glycol chitosan conjugated gold nanoparticles for photoacoustic imaging of regional lymph nodes and delivering tumor antigen to lymph nodes	Lymph node mapping is important in cancer immunotherapy because the morphology of lymph nodes is one of the crucial evaluation criteria of immune resp
October 18, 2021	Role of dextran in stabilization of polypyrrole nanoparticles for photoacoustic imaging	Polypyrrole with bioinert surface is a prospective contrast agent for photoacoustic imaging.
October 18, 2021	Immune/Hypoxic Tumor Microenvironment Regulation-Enhanced Photodynamic Treatment Realized by pH-Responsive Phase Transition-Targeting Nanobubbles	Due to a special pathological type of triple-negative breast cancer (TNBC) and the lack of expression of the estrogen receptor (ER), progesterone rece
August 24, 2021	Ultrasensitive Carbon Nanotubes for Photoacoustic Imaging of Inflamed Atherosclerotic Plaques	Disruption of vulnerable atherosclerotic plaques often leads to myocardial infarction and stroke, the leading causes of morbidity and mortality in the
August 24, 2021	Targeted Micellar Phthalocyanine for Lymph Node Metastasis Homing and Photothermal Therapy in an Orthotopic Colorectal Tumor Model	Small-sized trastuzumab-targeted micelles (T-MP) were engineered using a surfactant-stripping approach that yielded concentrated phthalocyanines with
August 09, 2021	Comparison of photoacoustic imaging and histopathological examination in determining the dimensions of 52 human melanomas and nevi ex vivo	Surgical excision followed by histopathological examination is the gold standard for the diagnosis and staging of melanoma.
August 09, 2021	Near-Infrared Heptamethine Cyanine Dyes for Nanoparticle-Based Photoacoustic Imaging and Photothermal Therapy	We have synthesized and characterized a library of near-infrared (NIR) heptamethine cyanine dyes for biomedical application as photoacoustic imaging a
August 09, 2021	Photoacoustic imaging for the monitoring of local changes in oxygen saturation following an adrenaline injection in human forearm skin	Clinical monitoring of blood oxygen saturation (sO ₂) is traditionally performed using optical techniques, such as pulse oximetry and diffuse reflecta
August 09, 2021	Automatic threshold selection algorithm to distinguish a tissue chromophore from the background in photoacoustic imaging	The adaptive matched filter (AMF) is a method widely used in spectral unmixing to classify different tissue chromophores in photoacoustic images.
August 09, 2021	NIR-II Photoacoustic Reporter for Biopsy-Free and Real-Time Assessment of Wilson's Disease	Wilson's disease (WD) is a rare inherited disorder of copper metabolism with pathological copper hyperaccumulation in some vital organs.
July 07, 2021	In vivo photoacoustic imaging for monitoring treatment outcome of corneal neovascularization with metformin eye drops	Corneal neovascularization (CNV) compromises corneal avascularity and visual acuity.
July 07, 2021	Low-dose X-ray enhanced tumor accumulation of theranostic nanoparticles for high-performance bimodal imaging-guided photothermal therapy	Background: Theranostic nanoparticles (NPs) have achieved rapid development owing to their capacity for personalized multimodal diagnostic imaging and
July 07, 2021	Activatable Carbocyanine Dimers for Photoacoustic and Fluorescent Detection of Protease Activity	Activatable contrast agents are of ongoing research interest because they offer low background and high specificity to the imaging target.

June 25, 2021	ROS-responsive liposomes with NIR light-triggered doxorubicin release for combinatorial therapy of breast cancer	Background: Reactive oxygen species (ROS)-responsive drug delivery systems (DDSs) are potential tools to minimize the side effects and substantially e
June 25, 2021	Regional motion correction for in vivo photoacoustic imaging in humans using interleaved ultrasound images	In translation from preclinical to clinical studies using photoacoustic imaging, motion artifacts represent a major issue.
June 25, 2021	Dual mitigation of immunosuppression combined with photothermal inhibition for highly effective primary tumor and metastases therapy	T-cell based immune response can attack cancer cells formidably when certain immune checkpoint (e.g., PD-1/PD-L1) is blocked.
June 25, 2021	Dual-Stimuli-Responsive Nanotheranostics for Dual-Targeting Photothermal-Enhanced Chemotherapy of Tumor	Stimuli-responsive nanotheranostics have been widely explored for precision medicine.
June 21, 2021	Volumetric tumor delineation and assessment of its early response to radiotherapy with optical coherence tomography	Texture analyses of optical coherence tomography (OCT) images have shown initial promise for differentiation of normal and tumor tissues.
June 21, 2021	Quantitative Functional Evaluation of Liver Fibrosis in Mice with Dynamic Contrast-enhanced Photoacoustic Imaging	Background Dynamic contrast-enhanced (DCE) photoacoustic (PA) imaging (PAI) is a novel noninvasive imaging modality that uses the differences in optic
June 21, 2021	Tailored theranostic nanoparticles cause efficient ferroptosis in head and neck squamous cell carcinoma through a reactive oxygen species "butterfly effect"	Multidrug resistance (MDR) is the main reason of chemotherapy failure in head and neck squamous cell carcinoma (HNSCC) patients, leading to the worst
June 09, 2021	A metal protoporphyrin-induced nano-self-assembly for potentiating photothermal therapy by depleting antioxidant defense systems	Nanomaterial-mediated low-temperature photothermal therapy (PTT) by integrating photothermal agent and heat shock proteins (HSPs) inhibitor holds grea
June 09, 2021	Construction of Smart Nanotheranostic Platform Bi-Ag@PVP: Multimodal CT/PA Imaging-Guided PDT/PTT for Cancer Therapy	High-efficiency nanotheranostic agents with multimodal imaging guidance have attracted considerable interest in the field of cancer therapy.
June 09, 2021	Tuning band gap of MnO ₂ nanoflowers by Alkali metal doping for enhanced Ferroptosis/phototherapy synergism in Cancer	Due to the complexity and heterogeneity of tumors, the therapeutic effectiveness of monomodal phototherapy is still limited.
June 07, 2021	Gold Nanorod-Melanin Hybrids for Enhanced and Prolonged Photoacoustic Imaging in the Near-Infrared-II Window	Photoacoustic (PA) imaging holds great promise as a noninvasive imaging modality.
June 07, 2021	In vivo photoacoustic assessment of the oxygen saturation changes in the human radial artery: a preliminary study associated with age	Significance: We demonstrate the potential of probing the sO ₂ change under blood flow in vivo using photoacoustic (PA) imaging and sheds light on the
June 07, 2021	Photoacoustic imaging of the spatial distribution of oxygen saturation in an ischemia-reperfusion model in humans	Photoacoustic imaging (PAI) is a novel hybrid imaging technique that combines the advantages of optical and ultrasound imaging to produce hyperspectra
June 04, 2021	Transmucosal Delivery of Self-Assembling Photosensitizer-Nitazoxanide Nanocomplexes with Fluorinated Chitosan for Instillation-Based Photodynamic Therapy of Orthotopic Bladder Tumors	Theoretically, on account of improved local bioavailability of photosensitizers and attenuated systemic phototoxicity, intravesical instillation-based

June 04, 2021	Oxygen and oxaliplatin-loaded nanoparticles combined with photodynamic inducing enhanced immunogenic cell death in syngeneic mouse models of ovarian cancer	Immunotherapy by stimulating the host immune system has been a promising therapeutic strategy for advanced ovarian cancer.
June 04, 2021	Hollow Mesoporous Silica Nanoparticles Gated by Chitosan-Copper Sulfide Composites as Theranostic Agents for the Treatment of Breast Cancer	The combination of chemotherapy and photothermal therapy (PTT) into a single formulation has attracted increasing attention as a strategy for enhancing
June 04, 2021	PH-triggered poly(ethylene glycol)-poly(lactic acid/glycolic acid)/croconaine nanoparticles-assisted multiplexed photoacoustic imaging and enhanced photothermal cancer therapy	The most advantageous and attractive property of photoacoustic imaging is its capability to visualize and differentiate multiple species according to
May 28, 2021	Photoacoustic imaging of myocardial infarction region using non-invasive fibrin-targeted nanoparticles in a rat myocardial ischemia-reperfusion model	Background and Purpose: Myocardial infarction (MI) is a serious threat to public health.
May 20, 2021	Development of an embedded multimodality imaging platform for onco-pharmacology using a smart anticancer prodrug as an example	Increasingly, in vivo imaging holds a strategic position in bio-pharmaceutical innovation.
March 25, 2021	One-step synthesis of multifunctional nanoparticles for CT/PA imaging guided breast cancer photothermal therapy	Advances in nanotheranostics have promoted the development of precision medicine, which has great potential as a weapon for clinical diagnosis and the
March 25, 2021	Photoacoustic monitoring of oxygenation changes induced by therapeutic ultrasound in murine hepatocellular carcinoma	Hepatocellular carcinoma (HCC) is a highly vascular solid tumor.
March 12, 2021	A multimodal molecular imaging approach targeting urokinase plasminogen activator receptor for the diagnosis, resection and surveillance of urothelial cell carcinoma	With a 5-year recurrence rate of 30–78%, urothelial cell carcinoma (UCC) rates amongst the highest of all solid malignancies.
March 08, 2021	Laser activatable perfluorocarbon bubbles for imaging and therapy through enhanced absorption from coupled silica coated gold nanoparticles	Nanoparticles have extensively been used for cancer therapy and imaging (i.e., theranostics) using various imaging modalities.
March 01, 2021	An application of multivariate data analysis to photoacoustic imaging for the spectral unmixing of gold nanorods in biological tissues	Gold nanorods (GNRs) showed to be a suitable contrast agent in photoacoustics (PA), and are able to provide a tunable absorption contrast against back
March 01, 2021	Photoacoustic and high-frequency ultrasound imaging of systemic sclerosis patients	Introduction: Systemic sclerosis starts with an early phase characterized by Raynaud's phenomenon, puffy fingers/hands, autoantibodies, and a sclerode
March 01, 2021	Photoacoustic Imaging and Sensing: A New Way to See the Eye	Purpose: Photoacoustics (optoacoustics) is a hybrid technology utilizing light excitation of acoustic responses in targets of interest.
March 01, 2021	Tumor microenvironments self-activated nanoscale metal organic frameworks for ferroptosis based cancer chemodynamic/photothermal/chemo therapy	Ferroptosis, as a newly discovered cell death form, has become an attractive target for precision cancer therapy.
February 23, 2021	Gold nanoparticle-based nanoprobe with enhanced tumor targeting and photothermal/photodynamic response for therapy of osteosarcoma	Abstract Plasmonic nanomaterials, especially a wide variety of gold nanoparticles, demonstrate great potential for theranostics of cancer.
February 23, 2021	Enhanced Antitumoral Activity and Photoacoustic Imaging Properties of AuNP-Enriched Endothelial Colony Forming Cells on Melanoma	Near infrared (NIR)-resonant gold nanoparticles (AuNPs) hold great promise in cancer diagnostics and treatment.

February 23, 2021	Multifunctional nanoparticles as theranostic agents for therapy and imaging of breast cancer	Over the last decade, there has been significant developments in nanotechnology, in particular for combined imaging and therapeutic applications (ther
February 23, 2021	Visualized podocyte-targeting and focused ultrasound responsive glucocorticoid nano-delivery system against immune-associated nephropathy without glucocorticoid side effect	Glucocorticoids are widely used in the treatment of nephritis, however, its dose-dependent side effects, such as the increased risk of infection and m
February 23, 2021	Another decade of photoacoustic imaging	Photoacoustic imaging - a hybrid biomedical imaging modality finding its way to clinical practices.
January 29, 2021	Quantitative In Vivo Monitoring of Hypoxia and Vascularization of Patient-Derived Murine Xenografts of Mantle Cell Lymphoma Using Photoacoustic and Ultrasound Imaging	Tumor oxygenation and vascularization are important parameters that determine the aggressiveness of the tumor and its resistance to cancer therapies.
January 28, 2021	Experimental Myocardial Infarction Elicits Time-Dependent Patterns of Vascular Hypoxia in Peripheral Organs and in the Brain	Aims: Microvascular alterations occurring after myocardial infarction (MI) may represent a risk factor for multi-organ failure.
January 18, 2021	Multifunctional nanotheranostic gold nanocage/ selenium core-shell for pai-guided chemo-photothermal synergistic therapy in vivo	Introduction: Cancer theragnosis involving cancer diagnosis and targeted therapy simultaneously in one integrated system would be a promising solution
January 14, 2021	Biomimetic Anti PD 1 Peptide Loaded 2D FePSe 3 Nanosheets for Efficient Photothermal and Enhanced Immune Therapy with Multimodal MR/PA/Thermal Imaging	Metal phosphorous trichalcogenides (MPX3) are novel 2D nanomaterials that have recently been exploited as efficient photothermal–chemodynamic agents f
January 04, 2021	Recent advances in applications of multimodal ultrasound-guided photoacoustic imaging technology	Photoacoustic imaging (PAI) is often performed simultaneously with ultrasound imaging and can provide functional and cellular information regarding th
January 04, 2021	Ultrastable AgBiS2Hollow Nanospheres with Cancer Cell-Specific Cytotoxicity for Multimodal Tumor Therapy	Specific cytotoxicity for catalytic nanomedicine triggered by the tumor microenvironment (TME) has attracted increasing interest.
January 04, 2021	Highly photostable croconium dye-anchored cell membrane vesicle for tumor pH-responsive duplex imaging-guided photothermal therapy	The development of tumor acidic microenvironment-responsive theranostic agents is a research hotspot.
January 04, 2021	Photoacoustic and magnetic resonance imaging of hybrid manganese dioxide-coated ultra-small NaGdF4 nanoparticles for spatiotemporal modulation of hypoxia in head and neck cancer	There is widespread interest in developing agents to modify tumor hypoxia in head and neck squamous cell carcinomas (HNSCC).
January 04, 2021	Multimodal Imaging of Pancreatic Ductal Adenocarcinoma Using Multifunctional Nanoparticles as Contrast Agents	Late diagnosis and refractory behavior toward current treatment protocols make pancreatic ductal adenocarcinoma (PDAC) one of the most difficult cance
January 04, 2021	Bacteria-derived membrane vesicles to advance targeted photothermal tumor ablation	Nanoscale outer membrane vesicles (OMVs) secreted by Gram-negative bacteria are often applied in antibacterial treatment as adjuvants or antigens.
January 04, 2021	Brain-targeted hypoxia-inducible factor stabilization reduces neonatal hypoxic-ischemic brain injury	Hypoxia-inducible factor-1 α (HIF1 α) is a major regulator of cellular adaptation to hypoxia and oxidative stress, and recent advances of prolyl-4-hydro

November 03, 2020	Comparison of photoacoustic and fluorescence tomography for the in vivo imaging of ICG-labelled liposomes in the medullary cavity in mice	Few reports quantitatively compare the performance of photoacoustic tomography (PAT) versus fluorescence molecular tomography (FMT) in vivo.
November 03, 2020	Ultrasound-stimulated microbubble radiation enhancement of tumors: Single-dose and fractionated treatment evaluation	The use of ultrasound-stimulated microbubble therapy has successfully been used to target tumor vasculature and enhance the effects of radiation therapy
November 03, 2020	Short-term molecular and cellular effects of ischemia/reperfusion on vascularized lymph node flaps in rats	Vascularized lymph node (VLN) transfer is an emerging strategy to re-establish lymphatic drainage in chronic lymphedema.
November 03, 2020	Targeted theranostics of lung cancer: PD-L1-guided delivery of gold nanoprisms with chlorin e6 for enhanced imaging and photothermal/photodynamic therapy	Peptide modified nanoparticles have emerged as powerful tools for enhanced cancer diagnosis and novel treatment strategies.
November 03, 2020	Respiratory Supercomplexes Promote Mitochondrial Efficiency and Growth in Severely Hypoxic Pancreatic Cancer	Pancreatic ductal adenocarcinoma (PDAC) is characterized by extensive fibrosis and hypovascularization, resulting in significant intratumoral hypoxia
October 20, 2020	Photoacoustic Imaging for Assessing Tissue Oxygenation Changes in Rat Hepatic Fibrosis	Chronic liver inflammation progressively evokes fibrosis and cirrhosis resulting in compromised liver function, and often leading to cancer.
October 19, 2020	In Vivo Real-Time Pharmaceutical Evaluations of Near-Infrared II Fluorescent Nanomedicine Bound Polyethylene Glycol Ligands for Tumor Photothermal Ablation	Pharmaceutical evaluations of nanomedicines are of great significance for their further launch into industry and clinic.
October 19, 2020	Opto-acoustic synergistic irradiation for vaporization of natural melanin-cored nanodroplets at safe energy levels and efficient sono-chemo-photothermal cancer therapy	Rationale: Insufficient penetration and accumulation of theranostic payloads in solid tumors greatly challenge the clinical translation of cancer nano
October 19, 2020	Tumor Microenvironment Cascade-Responsive Nanodrug with Self-Targeting Activation and ROS Regeneration for Synergistic Oxidation-Chemotherapy	Carrier-free nanodrug with exceptionally high drug payload has attracted increasing attentions.
October 19, 2020	Different PEG-PLGA Matrices Influence In Vivo Optical/Photoacoustic Imaging Performance and Biodistribution of NIR-Emitting π -Conjugated Polymer Contrast Agents	The π -conjugated polymer poly[2,6-(4,4-bis-(2-ethylhexyl)-4H-cyclopenta[2,1-b;3,4-b0]-dithiophene)-alt-4,7-(2,1,3-benzothiadiazole)] (PCPDTBT) with de
October 16, 2020	Photoacoustic imaging for non invasive examination of the healthy temporal artery – systematic evaluation of visual function in healthy subjects	Purpose: Photoacoustic (PA) imaging has the potential to become a non-invasive diagnostic tool for giant cell arteritis, as shown in pilot experiments
October 16, 2020	Dual-modal magnetic resonance and photoacoustic tracking and outcome of transplanted tendon stem cells in the rat rotator cuff injury model	Stem cells have been used to promote the repair of rotator cuff injury, but their fate after transplantation is not clear.
October 16, 2020	Reduction Triggered In Situ Polymerization in Living Mice	"Smart" biomaterials that are responsive to physiological or biochemical stimuli have found many biomedical applications for tissue engineering, therapy
October 16, 2020	Platelet membrane-functionalized nanoparticles with improved targeting ability and lower hemorrhagic risk for thrombolysis therapy	Intravenous injection of thrombolytic drugs is the most effective strategy for the treatment of thrombotic diseases.

October 16, 2020	Iron(II) phthalocyanine loaded and as1411 aptamer targeting nanoparticles: A nanocomplex for dual modal imaging and photothermal therapy of breast cancer	Purpose: A multi-functional nanoplatform with diagnostic imaging and targeted treatment functions has aroused much interest in the nanomedical research
October 16, 2020	pH-responsive Ag ₂ S nanodots loaded with heat shock protein 70 inhibitor for photoacoustic imaging-guided photothermal cancer therapy	Heat-treated cancer cells have thermo-resistance due to the up-regulated levels of heat shock proteins (HSP) resulting in low therapeutic efficiency a
October 01, 2020	Albumin-constrained large-scale synthesis of renal clearable ferrous sulfide quantum dots for T1-Weighted MR imaging and phototheranostics of tumors	Ultras-small-sized iron-based nanoparticles are showing increasing potentials to be alternatives as T1-weighted magnetic resonance imaging (MRI) kontras
September 09, 2020	In vivo photoacoustic guidance of stem cell injection and delivery for regenerative spinal cord therapies	Significance: Stem cell therapies are of interest for treating a variety of neurodegenerative diseases and injuries of the spinal cord.
September 09, 2020	The novel DPP-BDT nanoparticles as efficient photoacoustic imaging and positron emission tomography agents in living mice	Background: Molecular imaging is of great benefit to early disease diagnosis and timely treatment.
September 09, 2020	Enhanced optical imaging properties of lipid nanocapsules as vehicles for fluorescent conjugated polymers	Conjugated polymer nanoparticles (CPNs) have emerged as highly photostable probes for optical and photoacoustic imaging.
September 09, 2020	Real-Time Noninvasive Bioluminescence, Ultrasound and Photoacoustic Imaging in NFκB-RE-Luc Transgenic Mice Reveal Glia Maturation Factor-Mediated Immediate and Sustained Spatio-Temporal Activation of NFκB Signaling Post-Traumatic Brain Injury in a Gender-	Neurotrauma especially traumatic brain injury (TBI) is the leading cause of death and disability worldwide.
September 09, 2020	Photoacoustic imaging biomarkers for monitoring biophysical changes during nanobubble-mediated radiation treatment	The development of novel anticancer therapies warrants the parallel development of biomarkers that can quantify their effectiveness.
July 01, 2020	Early cerebrovascular and long-term neurological modifications ensue following juvenile mild traumatic brain injury in male mice	Clinical evidence suggests that a mild traumatic brain injury occurring at a juvenile age (jmTBI) may be sufficient to elicit pathophysiological modif
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	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.
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	Photoacoustic imaging for three-dimensional visualization and delineation of basal cell carcinoma in patients	Background: Photoacoustic (PA) imaging is an emerging non-invasive biomedical imaging modality that could potentially be used to determine the borders
May 14, 2020	Nanostructural Control Enables Optimized Photoacoustic–Fluorescence–Magnetic Resonance Multimodal Imaging and Photothermal Therapy of Brain Tumor	The performance of current multimodal imaging contrast agents is often constrained by the tunability of nanomaterial structural design.

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.
May 01, 2020	Biodegradable theranostic nanoplateforms of albumin-biomineralized nanocomposites modified hollow mesoporous organosilica for photoacoustic imaging guided tumor synergistic therapy	Benefit from the integration of therapeutic and diagnostic functions, theranostic nanoplateforms have attracted widespread attention in preclinical res
May 01, 2020	Fluence-matching technique using photoacoustic radiofrequency spectra for improving estimates of oxygen saturation	Photoacoustic (PA) signals encode information about the optical absorption and spatial distribution of absorbing chromophores as well as the light dis
May 01, 2020	Design of Light/ROS Cascade-Responsive Tumor-Recognizing Nanotheranostics for Spatiotemporally Controlled Drug Release in Locoregional Photo-Chemotherapy	Carrier-free nanotheranostics with high drug loading and no carrier-related toxicity are highly promising cancer therapy agents.
May 01, 2020	Biogenic nanobubbles for effective oxygen delivery and enhanced photodynamic therapy of cancer	Tumor hypoxia is believed to be a factor limiting successful outcomes of oxygen-consuming cancer therapy, thereby reducing patient survival.
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.
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 therapy
April 01, 2020	3D printed core-shell hydrogel fiber scaffolds with NIR-triggered drug release for localized therapy of breast cancer	Localized therapy using hydrogels-based drug delivery system (DDS) is a promising strategy for the treatment of diseases such as cancer in superficial
April 01, 2020	Spectral Signatures in the Different Layers of the Human Eyelid by Photoacoustic Imaging	Background and Objectives: The eyelids are susceptible to a number of skin cancers, which are challenging to excise radically without sacrificing exce
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 Bi ₂ S ₃ : 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 -Fe ₂ O ₃ /SiO ₂ -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	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.

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	Light-activated oxygen self-supplied starving therapy in near-infrared (NIR) window and adjuvant hyperthermia-induced tumor ablation with an augmented sensitivity	Glucose oxidase (GOx)-mediated starvation circumvents the energy supply for tumor growth, which has been proved as a potent tumor treatment modality.
March 01, 2020	Cathodic protected Mn ²⁺ by Na ₂ WO ₃ 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
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 CoS ₂ 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
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	Photomagnetic Prussian blue nanocubes: Synthesis, characterization, and biomedical applications	Nanoparticles play an important role in biomedicine.
January 30, 2020	Interstitial diffuse optical probe with spectral fitting to measure dynamic tumor hypoxia	Understanding the dynamic nature of tumor hypoxia is vital for cancer therapy.
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.
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	Label-free photoacoustic and ultrasound imaging for murine atherosclerosis characterization	Dual-modality photoacoustic tomography (PAT) and 4D ultrasound (4DUS) imaging have shown promise for cardiovascular applications, but their use in mur
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	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	Chemiluminescence resonance energy transfer-based nanoparticles for quantum yield-enhanced cancer phototheranostics	Chemiluminescence (CL) has recently gained attention for CL resonance energy transfer (CRET)–mediated photodynamic therapy of cancer.
January 01, 2020	Photoacoustic Imaging of Tattoo Inks: Phantom and Clinical Evaluation	Photoacoustic imaging (PAI) is a novel hybrid imaging modality that provides excellent optical contrast with the spatial resolution of ultrasound in v
January 01, 2020	Multimodal Photoacoustic Imaging Guided Regression of Corneal Neovascularization: A Non Invasive and Safe Strategy	Corneal neovascularization (CNV) is one of the main factors that induce blindness worldwide.
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	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	Ultrasound-Switchable Nanozyme Augments Sonodynamic Therapy against Multidrug-Resistant Bacterial Infection	Ultrasound (US)-driven sonodynamic therapy (SDT) has demonstrated wide application prospects in the eradication of deep-seated bacterial infections du
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	Fluorinated Chitosan To Enhance Transmucosal Delivery of Sonosensitizer-Conjugated Catalase for Sonodynamic Bladder Cancer Treatment Post-intravesical Instillation	Sonodynamic therapy (SDT) is a noninvasive ultrasound-triggered therapeutic strategy for site-specific treatment of tumors with great depth penetratio
January 01, 2020	Radiosensitive core/satellite ternary heteronanostructure for multimodal imaging-guided synergistic cancer radiotherapy	Developing safe, effective and targeting radiosensitizers with clear action mechanisms to achieve synergistic localized cancer treatment is an importa
January 01, 2020	Programmable NIR II Photothermal Enhanced Starvation Primed Chemodynamic Therapy using Glucose Oxidase Functionalized Ancient Pigment Nanosheets	Chemodynamic therapy (CDT) has attracted considerable attention recently, but the poor reaction kinetics restrict its practical utility in clinic.
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	Tumor-Specific Endogenous Fe II -Activated, MRI-Guided Self-Targeting Gadolinium-Coordinated Theranostic Nanoplatforms 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	Near-Infrared Light-Responsive Nitric Oxide Delivery Platform for Enhanced Radioimmunotherapy	Radiotherapy (RT) is a widely used way for cancer treatment.
January 01, 2020	Molecular imaging of advanced atherosclerotic plaques with folate receptor-targeted 2D nanopobes	Vulnerable atherosclerotic plaques are responsible for most cardiovascular diseases (CVDs).
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 transparence to 700–1100-nm near-infrared (NIR) light.

January 01, 2020	Inhibited metastasis and amplified chemotherapeutic effects by epigene-transfection based on a tumor-targeting nanoparticle	Purpose: Tumor metastasis and drug resistance have always been vital aspects to cancer mortality and prognosis.
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	A Mitochondria Driven Metabolic Sensing Nanosystem for Oxygen Availability and Energy Blockade of Cancer	A mitochondrial targeting and adenosine triphosphate (ATP) responsive nanosystem is designed and constructed to interfere with mitochondrial respirati
January 01, 2020	Multimodal theranostics augmented by transmembrane polymer-sealed nano-enzymatic porous MoS2 nanoflowers	Developing an all-in-one multimodal theranostic platform that can synergistically integrate sensitive photoacoustic (PA) imaging, enhanced phototherma
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 smal
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	On-demand drug release nanoplatform based on fluorinated aza-BODIPY for imaging-guided chemo-phototherapy	Intelligent drug delivery systems (DDS), integrating with multi-modal imaging guidance and controlled drug release, have practical significance in enh
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	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 thera
January 01, 2020	Hydrogen-Peroxide-Responsive Protein Biomimetic Nanoparticles for Photothermal-Photodynamic Combination Therapy of Melanoma	Background and Objectives: Recently, there has been a rapid increase in the incidences of melanoma, which represents a serious threat to human health.
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	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	Magneto-plasmonic nanostars for image-guided and NIR-triggered drug delivery	Smart multifunctional nanoparticles with magnetic and plasmonic properties assembled on a single nanoplatform are promising for various biomedical app
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	Biodegradable Bi ₂ O ₂ Se 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	Optimizing the Geometry of Photoacoustically Active Gold Nanoparticles for Biomedical Imaging	Photoacoustics is an upcoming modality for biomedical imaging, which promises minimal invasiveness at high penetration depths of several centimeters.
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	In vivo photoacoustic imaging dynamically monitors the structural and functional changes of ischemic stroke at a very early stage	Ischemic stroke (IS) is one of the leading causes of death and accounts for 85% of stroke cases.
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	TME-activatable theranostic nanoplatform with ATP burning capability for tumor sensitization and synergistic therapy	Adenosine triphosphate (ATP), as a key substance for regulating tumor progression in the tumor microenvironment (TME), is an emerging target for tumor
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	Reactive Oxygen Species Scavenging Scaffold with Rapamycin for Treatment of Intervertebral Disk Degeneration	The chronic inflammatory microenvironment is characterized by the elevated level of reactive oxygen species (ROS).
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	Polydopamine-doped virus-like structured nanoparticles for photoacoustic imaging guided synergistic chemo-/photothermal therapy	The therapeutic diagnosis effect of cancer commonly depends on the cellular uptake efficiency of nanomaterials.
January 01, 2020	Tumor Microenvironment Adaptable Nanoplatform for O ₂ 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	Targeted nanobubbles carrying indocyanine green for ultrasound, photoacoustic and fluorescence imaging of prostate cancer	Objective: To construct prostate-specific membrane antigen (PSMA)-targeting, indocyanine green (ICG)-loaded nanobubbles (NBs) for multimodal (ultrasou
January 01, 2020	Targeted beta therapy of prostate cancer with ¹⁷⁷ Lu-labelled Miltuximab® antibody against glypican-1 (GPC-1)	Purpose: Chimeric antibody Miltuximab®, a human IgG1 engineered from the parent antibody MIL-38, is in clinical development for solid tumour therapy.
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 nanoplat- form with optional therapeutic strategies is highly desirable to select the most suitable therapeuti
January 01, 2020	NIR/ROS Responsive Black Phosphorus QD Vesicles as Immunoadjuvant 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 filed.
December 24, 2019	Spectral photoacoustic imaging to estimate in vivo placental oxygenation during preeclampsia	Preeclampsia is a pregnancy-related hypertensive disorder accounting for 14% of global maternal deaths annually.
December 01, 2019	Dynamic photoacoustic imaging of neurovascular coupling in salivary glands	The purpose of this study was to apply photoacoustic imaging (PAI), a relatively new imaging method, to non-invasively map neurovascular dynamics in s
November 01, 2019	Effects of gold nanoprism-assisted human PD-L1 siRNA on both gene down-regulation and photothermal therapy on lung cancer	Gold nanoprisms (GNPs) have been broadly studied for the potential applications in both imaging and treatment on tumors due to their special character
November 01, 2019	Photothermal-pH-hypoxia responsive multifunctional nanoplatform for cancer photo-chemo therapy with negligible skin phototoxicity	Highly specific and effective cancer phototherapy remains as a great challenge.
November 01, 2019	Laser-triggered polymeric lipoproteins for precision tumor penetrating theranostics	Natural particles ranging from various cell membranes to nascent proteins are highly optimized for their specific functions in vivo and possess featur
October 01, 2019	Feasibility of photoacoustic imaging for the non-invasive quality management of stored blood bags	Background and Objectives: During the in vitro storage of red blood cells (RBCs), unfavourable changes (storage lesions) cause a rapid consumption of
October 01, 2019	Magnetic-responsive and targeted cancer nanotheranostics by PA/MR bimodal imaging-guided photothermally triggered immunotherapy	While theranostic nanoparticle (TNP)-based photothermal therapy (PTT) exhibits prominent promise for cancer therapy, metastatic cancers remain one of
September 01, 2019	Inhibition of breast cancer proliferation and metastasis by strengthening host immunity with a prolonged oxygen-generating phototherapy hydrogel	Hypoxia is a potent tumor microenvironmental (TME) factor promoting immunosuppression and metastatic progression.
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
January 01, 2019	pH/NIR-responsive semiconducting polymer nanoparticles for highly effective photoacoustic image guided chemo-photothermal synergistic therapy	ABSTRAC T Multifunctional drug delivery nanoplatform (PDPP3T@PSNiAA NPs) based on NIR absorbing semiconducting polymer nanoparticles for pH/NIR light-

January 01, 2019	Nanozymes-Engineered Metal–Organic Frameworks for Catalytic Cascades-Enhanced Synergistic Cancer Therapy	The efficiency of chemical intercommunication between enzymes in natural networks can be significantly enhanced by the organized catalytic cascades.
January 01, 2019	Hybrid organosilicon/polyol phantom for photoacoustic imaging	The rapid development of hardware and software for photoacoustic technologies is urging the establishment of dedicated tools for standardization and p
January 01, 2019	Photoacoustic simulations of microvascular bleeding: spectral analysis and its application for monitoring vascular-targeted treatments	Solid tumors are typically supplied nutrients by a network of irregular blood vessels.
January 01, 2019	Folate-Targeted and Oxygen/Indocyanine Green-Loaded Lipid Nanoparticles for Dual-Mode Imaging and Photo-sonodynamic/Photothermal Therapy of Ovarian Cancer in Vitro and in Vivo	We have successfully fabricated versatile folate-targeted and oxygen/indocyanine green-loaded lipid nanoparticles (FA-OINPs) for dual-mode imaging-gui
January 01, 2019	Hollow Cu ₂ Se Nanozymes for Tumor Photothermal-Catalytic Therapy	Tumor microenvironment (TME)-mediated cancer therapy, such as chemodynamic therapy (CDT) based on Fenton reaction, has attracted extensive attention i
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	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	Differential Diagnosis and Precision Therapy of Two Typical Malignant Cutaneous Tumors Leveraging Their Tumor Microenvironment: A Photomedicine Strategy	Elevated hydrogen peroxide (H ₂ O ₂) in biological tissues is generally recognized to be relevant to the carcinogenesis process that regulates the prolif
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	Photoacoustic imaging of gold nanorods in the brain delivered via microbubble-assisted focused ultrasound: a tool for in vivo molecular neuroimaging	The protective barriers of the CNS present challenges during the treatment and monitoring of diseases.
January 01, 2019	Precision Cancer Theranostic Platform by In Situ Polymerization in Perylene Diimide-Hybridized Hollow Mesoporous Organosilica Nanoparticles	Phototheranostics refers to advanced photonics-mediated theranostic methods for cancer and includes imaging-guided photothermal/chemotherapy, photothe
January 01, 2019	Oil Core–PEG Shell Nanocarriers for In Vivo MRI Imaging	Oil-in-water emulsions represent a promising carrier for in vivo imaging because of the possibility to convey poorly water-soluble species.
January 01, 2019	Tumor pH Responsive Albumin/Polyaniline Assemblies for Amplified Photoacoustic Imaging and Augmented Photothermal Therapy	Tumor-microenvironment-responsive theranostics have great potential for precision diagnosis and effective treatment of cancer.
January 01, 2019	Central action of rapamycin on early ischemic injury and related cardiac depression following experimental subarachnoid hemorrhage	Early brain injury and related cardiac consequences play a key role in the devastating outcomes after subarachnoid hemorrhage (SAH).

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	Novel Oxygen-Deficient Zirconia (ZrO_{2-x}) for Fluorescence/Photoacoustic Imaging-Guided Photothermal/Photodynamic Therapy for Cancer	Theranostic nanoplatforms that integrate therapy and diagnosis in a single composite have become increasingly attractive in the field of precise and e
January 01, 2019	Verteporfin-Loaded Lipid Nanoparticles Improve Ovarian Cancer Photodynamic Therapy In Vitro and In Vivo	Advanced ovarian cancer is the most lethal gynecological cancer, with a high rate of chemoresistance and relapse.
January 01, 2019	Oxygenated theranostic nanoplatforms with intracellular agglomeration behavior for improving the treatment efficacy of hypoxic tumors	Hypoxia plays vital roles in the development of tumor resistance against typical anticancer therapies and local reoxygenation has proved effective to
January 01, 2019	Organosilica-Based Hollow Mesoporous Bilirubin Nanoparticles for Antioxidation-Activated Self-Protection and Tumor-Specific Deoxygenation-Driven Synergistic Therapy	A major concern about glucose oxidase (GOx)-mediated cancer starvation therapy is its ability to induce serious oxidative damage to normal tissues thr
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	Hybrid Protein Nano Reactors Enable Simultaneous Increments of Tumor Oxygenation and Iodine 131 Delivery for Enhanced Radionuclide Therapy	It is hard for current radionuclide therapy to render solid tumors desirable therapeutic efficacy owing to insufficient tumor targeted delivery of rad
January 01, 2019	Chlorella-gold nanorods hydrogels generating photosynthesis-derived oxygen and mild heat for the treatment of hypoxic breast cancer	Hypoxic tumors are rarely cured because their low oxygen environment restricts the cytotoxicity of many chemotherapeutics by blocking the production o
January 01, 2019	Fluorinated Polyethylenimine to Enable Transmucosal Delivery of Photosensitizer Conjugated Catalase for Photodynamic Therapy of Orthotopic Bladder Tumors Postintravesical Instillation	Photodynamic therapy (PDT) by insertion of an optical fiber into the bladder cavity has been applied in the clinic for noninvasive treatment of bladge
January 01, 2019	In Vivo Quantitative Photoacoustic Diagnosis of Gastric and Intestinal Dysfunctions with a Broad pH-Responsive Sensor	Gastrointestinal diseases affect many people in the world and significantly impair life quality and burden the healthcare system.
January 01, 2019	Localized Free Radicals Burst Triggered by NIR-II Light for Augmented Low-Temperature Photothermal Therapy	As a novel treatment modality of tumors, hypothermal hyperthermia employed relatively lower temperature (
January 01, 2019	Ordered assemblies of Fe_3O_4 and a donor-acceptor-type π -conjugated polymer in nanoparticles for enhanced photoacoustic and magnetic effects	We report that the ordered structure in the assemblies of iron oxide nanoparticles in conjugated polymer nanoparticles is the key to achieve better pr
January 01, 2019	Photoacoustic imaging of cancer cells with glycol-chitosan-coated gold nanoparticles as contrast agents	Utility of glycol-chitosan-coated gold nanoparticles (GC-AuNPs) as a photoacoustic contrast agent for cancer cell imaging was demonstrated.
January 01, 2019	One-pot growth of triangular SnS nanopyramids for photoacoustic imaging and photothermal ablation of tumors	Recently, metal sulfides have received great attention in biomedical applications due to their fascinating properties.

January 01, 2019	Phase Change Materials Based Nanoparticles for Controlled Hypoxia Modulation and Enhanced Phototherapy	Tumor hypoxia strengthens tumor resistance to different therapies especially oxygen involved strategies, such as photodynamic therapy (PDT).
January 01, 2019	Improved Healing of Diabetic Foot Ulcer upon Oxygenation Therapeutics through Oxygen-Loading Nanoperfluorocarbon Triggered by Radial Extracorporeal Shock Wave	Diabetic foot ulcers (DFUs), the most serious complication of diabetes mellitus, can induce high morbidity, the need to amputate lower extremities, an
January 01, 2019	Assessment of Age-related Oxygenation Changes in Calf Skeletal Muscle by Photoacoustic Imaging: A Potential Tool for Peripheral Arterial Disease	Peripheral artery disease is often asymptomatic, and various imaging and nonimaging techniques have been used for assessment and monitoring treatments
January 01, 2019	Performance Characteristics of Photoacoustic Imaging Probes with Varying Frequencies and Light-delivery Schemes	Photoacoustic imaging (PAI) is an emerging biomedical imaging technique that utilizes a combination of light and ultrasound to detect photoabsorbers e
January 01, 2019	Activatable Small Molecule Photoacoustic Probes that Cross the Blood–Brain Barrier for Visualization of Copper(II) in Mice with Alzheimer's Disease	Copper enrichment in the brain is highly related to Alzheimer's disease (AD) pathogenesis, but in vivo tracing of Cu ²⁺ in the brain by imaging techniques
January 01, 2019	Self-Assembled Polysaccharide–Diphenylalanine/Au Nanospheres for Photothermal Therapy and Photoacoustic Imaging	Gold-based nanomaterials have attracted extensive interest for potential application in photothermal therapy (PTT) owing to their distinctive properti
January 01, 2019	1300 nm absorption two-acceptor semiconducting polymer nanoparticles for NIR-II photoacoustic imaging system guided NIR-II photothermal therapy	1300 nm absorption SPNs were designed to realize in vivo NIR-II PTT treatment guided by commercial NIR-II PAI systems.
January 01, 2019	Tumor Microenvironment Responsive Shape-Reversal Self-Targeting Virus-Inspired Nanodrug for Imaging-Guided Near-Infrared-II Photothermal Chemotherapy	Tumor microenvironment responsive multimodal synergistic theranostic strategies can significantly improve the therapeutic efficacy while avoiding severe
January 01, 2019	Noninvasive Photoacoustic Imaging of Dendritic Cell Stimulated with Tumor Cell-Derived Exosome	Purpose: The tools to trigger dendritic cell (DC) activation and to verify DC migration in vivo are important for directing DC immunotherapy toward su
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	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	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
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	Erythrocytic bioactivation of nitrite and its potentiation by far-red light	Background: Nitrite is reduced by heme-proteins and molybdenum-containing enzymes to form the important signaling molecule nitric oxide (NO), mediatin

January 01, 2019	Photoacoustic and Ultrasound Dual-Mode Imaging via Functionalization of Recombinant Protein-Stabilized Microbubbles with Methylene Blue	Contrast-enhanced photoacoustics and ultrasonics are complementary methods of bioimaging.
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 evade
January 01, 2019	Fluorescent Silicon Nanorods-Based Nanotheranostic Agents for Multimodal Imaging-Guided Photothermal Therapy	The utilization of diagnosis to guide/aid therapy procedures has shown great prospects in the era of personalized medicine along with the recognition
December 21, 2018	Ratiometric Photoacoustic Nanoprobe for Bioimaging of Cu ²⁺	Aberrant copper content implicates numerous diseases including Alzheimer's disease and Wilson's disease.
December 17, 2018	Evaluation of renal oxygen saturation using photoacoustic imaging for the early prediction of chronic renal function in a model of ischemia-induced acute kidney injury	PURPOSE: To evaluate the utility of photoacoustic imaging in measuring changes in renal oxygen saturation after ischemia-induced acute kidney injury,
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 15, 2018	A Multimodal Molecular Imaging Study Evaluates Pharmacological Alteration of the Tumor Microenvironment to Improve Radiation Response	Hypoxic zones in solid tumors contribute to radioresistance, and pharmacological agents that increase tumor oxygenation prior to radiation, including
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
December 01, 2018	Photoacoustic imaging for monitoring periodontal health: A first human study	The gold-standard periodontal probe is an aging tool that can detect periodontitis and monitor gingival health but is highly error-prone, does not ful
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 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
October 10, 2018	Self-Supplied Tumor Oxygenation through Separated Liposomal Delivery of H ₂ O ₂ and Catalase for Enhanced Radio-Immunotherapy of Cancer	The recent years have witnessed the blooming of cancer immunotherapy, as well as their combinational use together with other existing cancer treatment
September 01, 2018	Laser-activated perfluorocarbon nanodroplets: a new tool for blood brain barrier opening	A major obstacle in the monitoring and treatment of neurological diseases is the blood brain barrier (BBB), a semipermeable barrier that prevents the
September 01, 2018	Biomimetic O ₂ -Evolving metal-organic framework nanoplatform for highly efficient photodynamic therapy against hypoxic tumor	Improving the supply of O ₂ and the circulation lifetime of photosensitizers for photodynamic therapy (PDT) in vivo would be a promising approach to el

September 01, 2018	Alternating block copolymer-based nanoparticles as tools to modulate the loading of multiple chemotherapeutics and imaging probes	Cancer therapy often relies on the combined action of different molecules to overcome drug resistance and enhance patient outcome.
July 01, 2018	Study of Long-Term Biocompatibility and Bio-Safety of Implantable Nanogenerators	Implantable nanogenerator (i-NG) has shown great promises for enabling self-powered implantable medical devices (IMDs).
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 14, 2018	A Gold/Silver Hybrid Nanoparticle for Treatment and Photoacoustic Imaging of Bacterial Infection	Ag ⁺ ions are a well-known antibacterial agent, and Ag nanoparticles act as a reservoir of these Ag ⁺ ions for targeted therapy of bacterial infections.
May 11, 2018	Impact of Age on Disease Progression and Microenvironment in Oral Cancer	Despite the recognized link between aging and cancer, most preclinical studies in experimental tumor models are conducted with 6- to 8-wk-old rodents.
April 22, 2018	Biomimetic nanoparticles delivered hedgehog pathway inhibitor to modify tumour microenvironment and improved chemotherapy for pancreatic carcinoma	The unique tumour microenvironment (TM) of pancreatic ductal adenocarcinoma (PDA) including highly desmoplastic ECM and low tumour perfusion supports
April 20, 2018	Magnetic resonance and photoacoustic imaging of brain tumor mediated by mesenchymal stem cell labeled with multifunctional nanoparticle introduced via carotid artery injection	OBJECTIVE: To evaluate the feasibility of visualizing bone marrow-derived human mesenchymal stem cells (MSCs) labeled with a gold-coated magnetic reso
April 06, 2018	Radiotherapy-Sensitized Tumor Photothermal Ablation Using γ -Polyglutamic Acid Nanogels Loaded with Polypyrrole	Development of versatile nanoscale platforms for cancer diagnosis and therapy is of great importance for applications in translational medicine.
April 02, 2018	Dual-modal photoacoustic and magnetic resonance tracking of tendon stem cells with PLGA/iron oxide microparticles in vitro	Reliable cell tracking is essential to understand the fate of stem cells following implantation, and thus promote the clinical application of stem cel
April 01, 2018	The combined therapeutic effects of iodine 131-labeled multifunctional copper sulfide-loaded microspheres in treating breast cancer	Compared to conventional cancer treatment, combination therapy based on well-designed nanoscale platforms may offer an opportunity to eliminate tumors
April 01, 2018	A Yolk-Shell Nanoplatform for Gene-Silencing-Enhanced Photolytic Ablation of Cancer	Noninvasive near infrared (NIR) light responsive therapy is a promising cancer treatment modality; however, some inherent drawbacks of conventional ph
March 01, 2018	Deep Tumor Penetrating Bioparticulates Inspired Burst Intracellular Drug Release for Precision Chemo-Phototherapy	The relevance of personalized medicine has inspired research for individually concerted diagnosis and therapy.
February 12, 2018	In vitro photoacoustic spectroscopy of pulsatile blood flow: probing the interrelationship between red blood cell aggregation and oxygen saturation	Assessments of the appropriateness and inappropriateness of behaviors may influence conflict, cohesion, and goal attainment in multinational organizat

February 01, 2018	Biomimetic Copper Sulfide for Chemo-Radiotherapy: Enhanced Uptake and Reduced Efflux of Nanoparticles for Tumor Cells under Ionizing Radiation	Combined chemo-radiotherapy is one of most widely applied treatments for clinical cancer therapy.
January 31, 2018	Design of Phase-Changeable and Injectable Alginate Hydrogel for Imaging-Guided Tumor Hyperthermia and Chemotherapy	The objective of the present study was to construct an alginate (AG)-based phase-changeable and injectable hydrogel for imaging-guided tumor hyperther
January 22, 2018	Preclinical Ultrasound-Guided Photoacoustic Imaging of the Placenta in Normal and Pathologic Pregnancy	Placental oxygenation varies throughout pregnancy.
January 01, 2018	Molecular imaging of tumor photoimmunotherapy: Evidence of photosensitized tumor necrosis and hemodynamic changes	Near-infrared photoimmunotherapy (NIR PIT) employs the photoabsorbing dye IR700 conjugated to antibodies specific for cell surface epidermal growth fa
January 01, 2018	Photoacoustic Imaging as an Early Biomarker of Radio Therapeutic Efficacy in Head and Neck Cancer	The negative impact of tumor hypoxia on radiotherapeutic efficacy is well recognized.
January 01, 2018	Generation of multiparametric MRI maps by using Gd-labelled-RBCs reveals phenotypes and stages of murine prostate cancer	Prostate Cancer (PCa) is the second most common and fifth cause of cancer-related mortality in males in Western Countries.
January 01, 2018	Dichroism-sensitive photoacoustic computed tomography	Photoacoustic computed tomography (PACT), a fast-developing modality for deep tissue imaging, images the spatial distribution of optical absorption.
January 01, 2018	Sensitization of Hypoxic Tumors to Radiation Therapy Using Ultrasound-Sensitive Oxygen Microbubbles	Purpose: Much of the volume of solid tumors typically exists in a chronically hypoxic microenvironment that has been shown to result in both chemother
January 01, 2018	Copper sulfide nanoparticles as a photothermal switch for TRPV1 signaling to attenuate atherosclerosis	Atherosclerosis is characterized by the accumulation of lipids within the arterial wall.
January 01, 2018	Prevascularization of dermal substitutes with adipose tissue-derived microvascular fragments enhances early skin grafting	Split-thickness skin grafts (STSG) are still the gold standard for the treatment of most skin defects.
January 01, 2018	Bacteria-like mesoporous silica-coated gold nanorods for positron emission tomography and photoacoustic imaging-guided chemo-photothermal combined therapy	Mesoporous silica nanoshell (MSN) coating has been demonstrated as a versatile surface modification strategy for various kinds of inorganic functional
January 01, 2018	Perfluorooctyl bromide & indocyanine green co-loaded nanoliposomes for enhanced multimodal imaging-guided phototherapy	As a highly biocompatible NIR dye, indocyanine green (ICG) has been widely explored for cancer treatment due to its various energy level transition pa
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	2D Ultrathin MXene-Based Drug-Delivery Nanoplatform for Synergistic Photothermal Ablation and Chemotherapy of Cancer	Two-dimensional (2D) MXenes, as a new 2D functional material nanosystem, have been extensively explored for broad applications.
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	Development of Citrate-Based Dual-Imaging Enabled Biodegradable Electroactive Polymers	Increasing occurrences of degenerative diseases, defective tissues, and severe cancers heighten the importance of advanced biomedical treatments, wh
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	Clinical translation of a novel photoacoustic imaging system for examining the temporal artery	The objective was to provide a clinical setup for photoacoustic imaging (PAI) of the temporal artery in humans and to describe the challenges encounte
January 01, 2018	Design of injectable agar-based composite hydrogel for multi-mode tumor therapy	We designed an injectable hydrogel by dissolving MoS ₂ /Bi ₂ S ₃ -PEG (MBP), doxorubicin (DOX) and agar into water for the concurrent tumor photothermal and
January 01, 2018	A laser-activated multifunctional targeted nanoagent for imaging and gene therapy in a mouse xenograft model with retinoblastoma Y79 cells	Retinoblastoma (RB) is the most common intraocular malignancy of childhood that urgently needs early detection and effective therapy methods.
January 01, 2018	One-pot synthesis of pH-responsive charge-switchable PEGylated nanoscale coordination polymers for improved cancer therapy	Nanoscale coordination polymers (NCPs) are promising nanomedicine platforms featured with biodegradability and versatile functionalities.
January 01, 2018	Nuclear factor 90 promotes angiogenesis by regulating HIF-1 α /VEGF-A expression through the PI3K/Akt signaling pathway in human cervical cancer article	© 2018 The Author(s).
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	Multi-layered tumor-targeting photothermal-doxorubicin releasing nanotubes eradicate tumors in vivo with negligible systemic toxicity	Multi-layered single-walled carbon nanotubes, termed SWNT@BSA@Au-S-PEG-FA@DOX, which integrate photothermal therapy with small molecule drug delivery,
January 01, 2018	Preoperative measurement of cutaneous melanoma and nevi thickness with photoacoustic imaging	Photoacoustic imaging (PAI) is an emerging biomedical imaging technology, which can potentially be used in the clinic to preoperatively measure melano
January 01, 2018	Improved photoacoustic-based oxygen saturation estimation with SNR-regularized local fluence correction	As photoacoustic (PA) imaging makes its way into the clinic, accuracy of PA-based metrics becomes increasingly important.
January 01, 2018	Switchable Photoacoustic Intensity of Methylene Blue via Sodium Dodecyl Sulfate Micellization	The interaction between methylene blue (MB) and sodium dodecyl sulfate (SDS) has been widely studied spectroscopically, but details about their intera
January 01, 2018	Au-PLGA Hybrid Nanoparticles with Catalase-Mimicking and near-Infrared Photothermal Activities for Photoacoustic Imaging-Guided Cancer Therapy	© 2018 American Chemical Society. Imaging-guided diagnosis and therapy has been highlighted in the area of nanomedicines.
January 01, 2018	An Easy-to-Fabricate Clearable CuS-Superstructure-Based Multifunctional Theranostic Platform for Efficient Imaging Guided Chemo-Photothermal Therapy	Despite drug delivery systems (DDSs) have been receiving ever-increasing attention, development of a simple, effective, sensitive and clearable drug d

January 01, 2018	Synthesis of Hollow Biomineralized CaCO ₃ -Polydopamine Nanoparticles for Multimodal Imaging-Guided Cancer Photodynamic Therapy with Reduced Skin Photosensitivity	The development of activatable nanoplatfoms to simultaneously improve diagnostic and therapeutic performances while reducing side effects is highly a
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	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	Octopod PtCu Nanoframe for Dual-Modal Imaging-Guided Synergistic Photothermal Radiotherapy	Heavy atom nanoparticles have high X-ray absorption capacity and near infrared (NIR) photothermal conversion efficiency, which could be used as radio-
January 01, 2018	Photoacoustic imaging of synovial tissue hypoxia in experimental post-traumatic osteoarthritis.	OBJECTIVES: This pilot study aimed to investigate the feasibility of non-invasively assessing synovial tissue hypoxia in vivo using photoacoustic (PA)
January 01, 2018	Small PLGA nanocapsules Co-encapsulating copper sulfide nanodots and fluorocarbon compound for photoacoustic imaging-guided HIFU synergistic therapy	A nanometer-sized inorganic/organic hybrid enhancement agent is constructed for photoacoustic imaging-guided high intensity focused ultrasound therap
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	Degradable rhenium trioxide nanocubes with high localized surface plasmon resonance absorbance like gold for photothermal theranostics	The applications of inorganic theranostic agents in clinical trials are generally limited to their innate non-biodegradability and potential long-term
January 01, 2018	Photoacoustic imaging of tumour vascular permeability with indocyanine green in a mouse model	Background: We analysed the haemodynamics of indocyanine green (ICG) in mouse organs and tumours and evaluated responses to anti-angiogenic agents in
January 01, 2018	Biodegradable Hollow Mesoporous Organosilica Nanotheranostics for Mild Hyperthermia-Induced Bubble-Enhanced Oxygen-Sensitized Radiotherapy	Alleviation of tumor hypoxia has been the premise for improving the effectiveness of radiotherapy, which hinges upon the advanced delivery and rapid r
January 01, 2018	Photoacoustic Imaging for Noninvasive Periodontal Probing Depth Measurements	The periodontal probe is the gold standard tool for periodontal examinations, including probing depth measurements, but is limited by systematic and r
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	Selective cancer treatment via photodynamic sensitization of hypoxia-responsive drug delivery	The precise and selective delivery of chemodrugs into tumors represents a critical requirement for anti-cancer therapy.

January 01, 2018	Highly Crystalline Multicolor Carbon Nanodots for Dual-Modal Imaging-Guided Photothermal Therapy of Glioma	Imaging-guided site-specific photothermal therapy (PTT) of glioma and other tumors in central nervous system presents a great challenge for the current
January 01, 2018	Visualizing the effects of metformin on tumor growth, vascularity, and metabolism in head and neck cancer	© 2018 John Wiley & Sons A/S.
December 01, 2017	Photoacoustic imaging for in vivo quantification of placental oxygenation in mice	Accurate analysis of placental and fetal oxygenation is critical during pregnancy.
November 24, 2017	NH ₄ HCO ₃ gas-generating liposomal nanoparticle for photoacoustic imaging in breast cancer	In this study, we have developed a biodegradable nanomaterial for photoacoustic imaging (PAI).
July 01, 2017	Drug "Pent-Up" in Hollow Magnetic Prussian Blue Nanoparticles for NIR-Induced Chemo-Photothermal Tumor Therapy with Trimodal Imaging	The study reports a biocompatible smart drug delivery system based on a doxorubicin (DOX) blending phase-change material of 1-pentadecanol loaded hollow
June 27, 2017	Fibrin-Targeted and H ₂ O ₂ -Responsive Nanoparticles as a Theranostics for Thrombosed Vessels	A thrombus (blood clot) is formed in injured vessels to maintain the integrity of vasculature.
June 01, 2017	Lanthanide-integrated supramolecular polymeric nanoassembly with multiple regulation characteristics for multidrug-resistant cancer therapy	Cancer treatment can in principle be enhanced by the synergistic effects of chemo- and nucleic acid-based combination therapies but the lack of efficiency
May 31, 2017	Marriage of Albumin-Gadolinium Complexes and MoS ₂ Nanoflakes as Cancer Theranostics for Dual-Modality Magnetic Resonance/Photoacoustic Imaging and Photothermal Therapy	The construction of safe and stable theranostics is beneficial to realize simultaneous cancer diagnosis and treatment.
May 01, 2017	Orthogonal near-infrared upconversion co-regulated site-specific O ₂ delivery and photodynamic therapy for hypoxia tumor by using red blood cell microcarriers	Pre-existing hypoxia in tumors can result in an inadequate oxygen supply during photodynamic therapy (PDT), which in turn hampers photodynamic efficacy
April 01, 2017	In vivo photoacoustics and high frequency ultrasound imaging of mechanical high intensity focused ultrasound (HIFU) ablation	The thermal effect of high intensity focused ultrasound (HIFU) has been clinically exploited over a decade, while the mechanical HIFU is still largely
March 24, 2017	Phase-Transition Nanodroplets for Real-Time Photoacoustic/Ultrasound Dual-Modality Imaging and Photothermal Therapy of Sentinel Lymph Node in Breast Cancer	Pathological status of lymph nodes (LNs) plays a critical role in staging and treatment for the patients with breast cancer.
March 01, 2017	Photoacoustic signal characterization of cancer treatment response: Correlation with changes in tumor oxygenation	Frequency analysis of the photoacoustic radiofrequency signals and oxygen saturation estimates were used to monitor the in-vivo response of a novel, t
February 01, 2017	Ultrasound-guided spectral photoacoustic imaging of hemoglobin oxygenation during development	Few technologies are capable of imaging in vivo function during development.
January 24, 2017	Theranostic Liposomes with Hypoxia-Activated Prodrug to Effectively Destruct Hypoxic Tumors Post-Photodynamic Therapy	Photodynamic therapy (PDT), a noninvasive cancer therapeutic method triggered by light, would lead to severe tumor hypoxia after treatment.
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 12, 2017	Real-Time Monitoring of Placental Oxygenation during Maternal Hypoxia and Hyperoxygenation Using Photoacoustic Imaging	PURPOSE: This preclinical study aimed to evaluate placental oxygenation in pregnant rats by real-time photoacoustic (PA) imaging on different days of
January 01, 2016	Engineered Zn(II)-dipicolylamine-gold nanorod provides effective prostate cancer treatment by combining siRNA delivery and photothermal therapy	Combination cancer treatment has emerged as a critical approach to achieve remarkable anticancer effect.
January 01, 2016	Polyaniline-loaded γ -polyglutamic acid nanogels as a platform for photoacoustic imaging-guided tumor photothermal therapy	We report the facile synthesis of polyaniline (PANI)-loaded γ -polyglutamic acid (γ -PGA) nanogels (NGs) for photoacoustic (PA) imaging-guided photother
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	Bottom-up synthesis of WS ₂ nanosheets with synchronous surface modification for imaging guided tumor regression	Two-dimensional transition metal dichalcogenides (TMDs) have been receiving great attention as NIR photothermal transducing agent in tumor phototherma
January 01, 2016	BSA-Bioinspired Gadolinium Hybrid-Functionalized Hollow Gold Nanoshells for NIRF/PA/CT/MR Quadmodal Diagnostic Imaging-Guided Photothermal/Photodynamic Cancer Therapy	Multimodal imaging guided synergistic therapy promises more accurate diagnosis and higher therapeutic efficiency than single imaging modality or their
January 01, 2016	Propofol (2,6-diisopropylphenol) is an applicable immersion anesthetic in the axolotl with potential uses in hemodynamic and neurophysiological experiments	The Mexican axolotl (<i>Ambystoma mexicanum</i>) is an important model species in regenerative biology.
January 01, 2016	Visualizing Changes in Cdkn1c Expression Links Early-Life Adversity to Imprint Mis-regulation in Adults	Imprinted genes are regulated according to parental origin and can influence embryonic growth and metabolism and confer disease susceptibility.
January 01, 2016	Optical clearing and fluorescence deep-tissue imaging for 3D quantitative analysis of the brain tumor microenvironment	© 2017 The Author(s) Background: Three-dimensional visualization of the brain vasculature and its interactions with surrounding cells may shed light o
January 01, 2016	Can photoacoustic imaging quantify surface-localized J-aggregating nanoparticles?	We investigate the feasibility of photoacoustic (PA) imaging to quantify the concentration of surface-localized nanoparticles, using tissue-mimicking
January 01, 2016	A feasibility study of photoacoustic imaging of ex vivo endoscopic mucosal resection tissues from Barrett's esophagus patients	Background and study aims Accurate endoscopic detection of dysplasia in patients with Barrett's esophagus (BE) remains a major clinical challenge.
January 01, 2016	Limiting the protein corona: A successful strategy for in vivo active targeting of anti-HER2 nanobody-functionalized nanostars	Gold nanoparticles hold great promise as anti-cancer theranostic agents against cancer by actively targeting the tumor cells.
January 01, 2016	Rational Design of Branched Nanoporous Gold Nanoshells with Enhanced Physico-Optical Properties for Optical Imaging and Cancer Therapy	Reported procedures on the synthesis of gold nanoshells with smooth surfaces have merely demonstrated efficient control of shell thickness and particl
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	Phase Transition Nanoparticles as Multimodality Contrast Agents for the Detection of Thrombi and for Targeting Thrombolysis: In Vitro and in Vivo Experiments	Thrombotic disease is extremely harmful to human health, and early detection and treatment can improve the prognosis and reduce mortality.
January 01, 2016	Self-assembly of semiconducting-plasmonic gold nanoparticles with enhanced optical property for photoacoustic imaging and photothermal therapy	Although various noble metal and semiconducting molecules have been developed as photoacoustic (PA) agents, the use of semiconducting polymer-metal na
January 01, 2016	Photoacoustic-Guided Surgery with Indocyanine Green-Coated Superparamagnetic Iron Oxide Nanoparticle Clusters	A common cause of local tumor recurrence in brain tumor surgery results from incomplete surgical resection.
January 01, 2016	Copper Sulfide Perfluorocarbon Nanodroplets as Clinically Relevant Photoacoustic/Ultrasound Imaging Agents	We have developed laser-activated perfluorocarbon nanodroplets containing copper sulfide nanoparticles (CuS NPs) for contrast-enhanced ultrasound and
January 01, 2016	Ultra-small Iron-Gallic Acid Coordination Polymer Nanoparticles for Chelator-free Labeling of ⁶⁴ Cu and Multimodal Imaging-guided Photothermal Therapy	Cancer nanotechnology has become the hot topic nowadays.
January 01, 2016	Enhanced photothermal therapy of biomimetic polypyrrole nanoparticles through improving blood flow perfusion	In this study, we reported a strategy to improve delivery efficiency of a long-circulation biomimetic photothermal nanoagent for enhanced photothermal
January 01, 2016	Oxygenation Status in Chronic Leg Ulcer After Topical Hemoglobin Application May Act as a Surrogate Marker to Find the Best Treatment Strategy and to Avoid Ineffective Conservative Long-term Therapy	Purpose: Chronic leg ulcers can be a challenge to treat and long-term therapy a significant cost factor in western public health budgets.
January 01, 2016	What is new in nanoparticle-based photoacoustic imaging?	Photoacoustic imaging combines the high temporal and spatial resolution of ultrasound with the good contrast and spectral tuning of optical imaging.
January 01, 2016	Hemispherical photoacoustic imaging of myocardial infarction: in vivo detection and monitoring	Objectives: This study aimed to demonstrate the capacity for noninvasive localisation and characterisation of myocardial infarction (MI) in vivo using
January 01, 2016	Two-Dimensional Tantalum Carbide (MXenes) Composite Nanosheets for Multiple Imaging-Guided Photothermal Tumor Ablation	MXenes, an emerging family of graphene- analogues two-dimensional (2D) materials, have attracted continuous and tremendous attention in many applicati
January 01, 2016	Chelator-Free and Biocompatible Melanin Nanoplatform with Facile-Loading Gadolinium and Copper-64 for Bioimaging	Development of a chelator-free and biocompatible platform for the facile construction of gadolinium ³⁺ (Gd ³⁺)-loaded nanoparticle based probes for in
January 01, 2016	Albumin-Templated Manganese Dioxide Nanoparticles for Enhanced Radioisotope Therapy	Although nanoparticle-based drug delivery systems have been widely explored for tumor-targeted delivery of radioisotope therapy (RIT), the hypoxia zon
January 01, 2016	Spatiotemporal Optoacoustic Mapping of Tumor Hemodynamics in a Clinically Relevant Orthotopic Rabbit Model of Head and Neck Cancer	The purpose of this study was to investigate the usefulness of photoacoustic imaging (PAI) for spatiotemporal mapping of tumor hemodynamics in a rabbi

January 01, 2016	A triple-synergistic strategy for combinational photo/radiotherapy and multi-modality imaging based on hyaluronic acid-hybridized polyaniline-coated WS 2 nanodots	In this study, we report a strategy for integrating hyaluronic acid (HA), polyaniline (PANI), WS2 nanodots (WS2), and chlorin e6 (Ce6) into a single n
January 01, 2016	A Theranostic Nanoplatform: 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	Energy-Absorbing and Local Plasmonic Nanodiamond/Gold Nanocomposites for Sustained and Enhanced Photoacoustic Imaging	Photoacoustic (PA) imaging is a laser-mediated optical ultrasound-based visualization that allows imaging of optical energy absorbers in deep tissue,
January 01, 2016	High-intensity focused ultrasound-triggered nanoscale bubble-generating liposomes for efficient and safe tumor ablation under photoacoustic imaging monitoring	High-intensity focused ultrasound (HIFU) is widely applied to tumors in clinical practice due to its minimally invasive approach.
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	Image Monitoring of the Impaired Phagocytic Activity of Kupffer Cells and Liver Oxygen Saturation in a Mouse Cholangitis Model Using Contrast-Enhanced Ultrasound Imaging and Photoacoustic Imaging	Bile duct ligation (BDL) can cause cholangitis, which is known to induce impaired Kupffer cell (KC) function and increased oxygen consumption in a mou
January 01, 2016	Red blood cell membrane-camouflaged melanin nanoparticles for enhanced photothermal therapy	Photothermal therapy (PTT) has represented a promising noninvasive approach for cancer treatment in recent years.
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	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	Photoacoustic Imaging of Embryonic Stem Cell-Derived Cardiomyocytes in Living Hearts with Ultrasensitive Semiconducting Polymer Nanoparticles	Human embryonic stem cell-derived cardiomyocytes (hESC-CMs) have become promising tools to repair injured hearts.
January 01, 2016	Black hollow silicon oxide nanoparticles as highly efficient photothermal agents in the second near-infrared window for in vivo cancer therapy	Semiconductor nanoparticles with localized surface plasmon resonance (LSPR) have gained increasing interest due to their potential for use in nanomedi
January 01, 2016	CuS-Based Theranostic Micelles for NIR-Controlled Combination Chemotherapy and Photothermal Therapy and Photoacoustic Imaging	Cancer remains a major threat to human health due to low therapeutic efficacies of currently available cancer treatment options.
January 01, 2016	Reactive Oxygen Species (ROS)-Responsive Nanomedicine for RNAi Cancer Therapy	Although much effort has been dedicated to the development of efficient siRNA delivery for cancer therapy, delivery nanomaterials that can particularl
January 01, 2016	Non-invasive monitoring of the therapeutic response in sorafenib-treated hepatocellular carcinoma based on photoacoustic imaging	PURPOSE: We investigated the changes of tissue oxygen saturation (sO ₂) in sorafenib-treated HCC (hepatocellular carcinoma) mouse models using photoacou

January 01, 2016	Seeding density is a crucial determinant for the in vivo vascularisation capacity of adipose tissue-derived microvascular fragments	© 2017, AO Research Institute. All rights reserved.
November 21, 2016	Skeletonization algorithm-based blood vessel quantification using in vivo 3D photoacoustic imaging	Blood vessels are the only system to provide nutrients and oxygen to every part of the body.
November 11, 2016	Photoacoustic Imaging for the Detection of Hypoxia in the Rat Femoral Artery and Skeletal Muscle Microcirculation	Photoacoustic (PA) imaging is an emerging technology that combines structural and functional imaging of tissues using laser and ultrasound energy.
October 12, 2016	Ultrasound Triggered Tumor Oxygenation with Oxygen-Shuttle Nanoperfluorocarbon to Overcome Hypoxia-Associated Resistance in Cancer Therapies	Tumor hypoxia is known to be one of critical reasons that limit the efficacy of cancer therapies, particularly photodynamic therapy (PDT) and radiothe
September 01, 2016	Tunable, biodegradable gold nanoparticles as contrast agents for computed tomography and photoacoustic imaging	Gold nanoparticles (AuNP) have been proposed for many applications in medicine.
August 17, 2016	A Multimodal Imaging Approach for Longitudinal Evaluation of Bladder Tumor Development in an Orthotopic Murine Model	Bladder cancer is the fourth most common malignancy amongst men in Western industrial- ized countries with an initial response rate of 70% for the non
August 01, 2016	Functional Flow Patterns and Static Blood Pooling in Tumors Revealed by Combined Contrast-Enhanced Ultrasound and Photoacoustic Imaging	Alterations in tumor perfusion and microenvironment have been shown to be associated with aggressive cancer phenotypes, raising the need for noninvasi
August 01, 2016	Multifunctional polyelectrolyte microcapsules as a contrast agent for photoacoustic imaging in blood	The polyelectrolyte microcapsules that can be accurate either visualized in biological media or in tissue would enhance their further in vivo applic
August 01, 2016	Photoacoustic Imaging in Oncology: Translational Preclinical and Early Clinical Experience	Photoacoustic imaging has evolved into a clinically translatable platform with the potential to complement existing imaging techniques for the managem
July 28, 2016	Contrast agents for molecular photoacoustic imaging	Photoacoustic imaging (PAI) is an emerging tool that bridges the traditional depth limits of ballistic optical imaging and the resolution limits of di
July 01, 2016	Simultaneous assessment of red blood cell aggregation and oxygen saturation under pulsatile flow using high-frequency photoacoustics	In the present paper, the optical wavelength dependence on the photoacoustic (PA) assessment of the pulsatile blood flow was investigated by means of
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 propertie
June 20, 2016	Preclinical efficacy of bevacizumab with CRLX101, an investigational nanoparticle-drug conjugate, in treatment of metastatic triple-negative breast cancer	VEGF-pathway targeting antiangiogenic drugs, such as bevacizumab, when combined with chemotherapy have changed clinical practice for the treatment of

June 15, 2016	Narrow Absorption NIR Wavelength Organic Nanoparticles Enable Multiplexed Photoacoustic Imaging	Photoacoustic (PA) imaging is an emerging hybrid optical- ultrasound based imaging technique that can be used to visualize optical absorbers in deep t
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 06, 2016	Photoacoustic imaging of angiogenesis in a subcutaneous islet transplant site in a murine model	Islet transplantation (IT) is an established clinical therapy for select patients with type-1 diabetes.
April 12, 2016	High Resolution Ultrasound and Photoacoustic Imaging of Orthotopic Lung Cancer in Mice: New Perspectives for Onco-Pharmacology	Objectives: We have developed a relevant preclinical model associated with a specific imaging protocol dedicated to onco-pharmacology studies in mice.
March 01, 2016	Cuffing-based photoacoustic flowmetry in humans in the optical diffusive regime	Measuring blood flow speed in the optical diffusive re- gime in humans has been a long standing challenge for photoacoustic tomography.
February 01, 2016	Monitoring Prostate Tumor Growth in an Orthotopic Mouse Model Using Three-Dimensional Ultrasound Imaging Technique	Prostate cancer (CaP) is the most commonly diagnosed and the second leading cause of death from cancer in males in USA.
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-inva
January 01, 2015	Photoacoustic monitoring of tumor and normal tissue response to radiation	Hypoxia is a recognized characteristic of tumors that influences efficacy of radiotherapy (RT).
January 01, 2015	Plasmonic fluorescent CdSe/Cu ₂ S hybrid nanocrystals for multichannel imaging and cancer directed photo-thermal therapy	A simple, crude Jatropha curcas (JC) oil-based synthesis approach, devoid of any toxic phosphine and pyrophoric ligands, to produce size and shape tun
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	Quantitative photoacoustic elastography in humans	Wereport quantitative photoacoustic elastography (QPAE) capable of measuring Young's modulus of biological tissue in vivo in humans.
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.
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	Multifunctional Fe ₃ O ₄ @ Au core/shell nanostars: a unique platform for multimode imaging and photothermal therapy of tumors	We herein report the development of multifunctional folic acid (FA)-targeted Fe ₃ O ₄ @ Au nanostars (NSs) for targeted multi-mode magnetic resonance (MR)
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	Multimodal near-infrared-emitting Plus Silica nanoparticles with fluorescent , photoacoustic , and photothermal capabilities	Purpose: The aim of the present study was to develop nanoprobe with theranostic features, including – at the same time – photoacoustic, near-infrared
January 01, 2015	Photoacoustic imaging of real-time oxygen changes in chronic leg ulcers after topical application of a haemoglobin spray: a pilot study	Objective: To use a non-invasive measurement of oxygen saturation in chronic leg ulcers after the application of a topical haemoglobin spray to invest
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	Multi-Wavelength Photoacoustic Visualization of High Intensity Focused Ultrasound Lesions	High intensity focused ultrasound (HIFU) thermal therapies are limited by deficiencies in existing image-guidance techniques.
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	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.
December 21, 2015	Folding Up of Gold Nanoparticle Strings into Plasmonic Vesicles for Enhanced Photoacoustic Imaging	The stepwise self-assembly of hollow plasmonic vesicles with vesicular membranes containing strings of gold nanoparticles (NPs) is reported.
November 01, 2015	Label-free Detection of Lymph Node Metastases with US-guided Functional Photoacoustic Imaging	Summary: Photoacoustic imaging imparts the ability to distinguish materials according to their differences in optical absorption (ie, their color) with
November 01, 2015	Handheld photoacoustic probe to detect both melanoma depth and volume at high speed in vivo	In the United States, Black infants have significantly worse birth outcomes than White infants.
October 27, 2015	Tumor-Specific Formation of Enzyme-Instructed Supramolecular Self-Assemblies as Cancer Theranostics	Despite the effort of developing various nanodelivery systems, most of them suffer from undesired high uptakes by the reticuloendothelial system, such
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

September 01, 2015	Photoacoustic imaging of salivary glands	In this work, we utilized photoacoustic imaging (PAI) with co-registered ultrasound (US) to non-invasively assess salivary gland function in vivo.
August 12, 2015	In vivo photoacoustic flowmetry at depths of the diffusive regime based on saline injection	We propose a saline injection-based method to quantify blood flow velocity in vivo with acoustic-resolution photoacoustic tomography.
July 01, 2015	Prophylactic Edoxaban Prevents Transient Hypoxic-Ischemic Brain Injury	Background and Purpose—Hypoperfusion-induced thrombosis is an important mechanism for postsurgery stroke and cognitive decline, but there are no per
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 01, 2015	Combined Ultrasound and Photoacoustic Imaging to Noninvasively Assess Burn Injury and Selectively Monitor a Regenerative Tissue-Engineered Construct	Current biomedical imaging tools have limitations in accurate assessment of the severity of open and deep burn wounds involving excess bleeding and se
May 01, 2015	Parts per billion detection of uranium with a porphyrinoid-containing nanoparticle and in vivo photoacoustic imaging	In the United States, Black infants have significantly worse birth outcomes than White infants.
April 01, 2015	Photoacoustic Imaging of Vascular Hemodynamics: Validation with Blood Oxygenation Level-Dependent MR Imaging	Purpose To noninvasively assess vascular hemodynamics with photoacoustic imaging (PAI) and blood oxygenation level-dependent (BOLD) magnetic resonance
March 30, 2015	In situ conversion of porphyrin microbubbles to nanoparticles for multimodality imaging	Converting nanoparticles or monomeric compounds into larger supramolecular structures by endogenous ^{1,2} or external ^{3,4} stimuli is increasingly popular
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 pro- posed as adjuvant therapeutic tools for pathologies of different e
January 01, 2015	Design of hybrid MnO ₂ -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	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	Prediction of Tumor Recurrence and Therapy Monitoring Using Ultrasound-Guided Photoacoustic Imaging	Selection and design of individualized treatments remains a key goal in cancer therapeutics; prediction of response and tumor recurrence following a g
January 01, 2015	Multi-stimuli responsive Cu ₂ S 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	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	Gold nanoparticles for photoacoustic imaging.	Photoacoustic (PA) imaging is a biomedical imaging modality that provides functional information regarding the cellular and molecular signatures of ti
January 01, 2015	Comparison of Photoacoustically Derived Hemoglobin and Oxygenation Measurements with Contrast-Enhanced Ultrasound Estimated Vascularity and Immunohistochemical Staining in a Breast Cancer Model	In this preliminary study, we compared two noninvasive techniques for imaging intratumoral physiological conditions to immunohistochemical staining in
December 23, 2014	Linear-array-based photoacoustic imaging of human microcirculation with a range of high frequency transducer probes	Photoacoustic imaging (PAI) with a linear-array-based probe ca
November 07, 2014	Photoacoustic Tomography of Human Hepatic Malignancies Using Intraoperative Indocyanine Green Fluorescence Imaging	Recently, fluorescence imaging following the preoperative intravenous injection of indocyanine green has been used in clinical settings to identify he
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	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.
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
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.
September 01, 2014	Cellulose nanoparticles are a biodegradable photoacoustic contrast agent for use in living mice	Molecular imaging with photoacoustic ultrasound is an emerging field that combines the spatial and temporal resolution of ultrasound with the contrast
August 26, 2014	Stimuli-Responsive Photoacoustic Nanoswitch for in Vivo Sensing Applications	Photoacoustic imaging provides high-resolution images at depths beyond the optical diffusion limit.
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 impo
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
May 01, 2014	Multimodal Ultrasound-Photoacoustic Imaging of Tissue Engineering Scaffolds and Blood Oxygen Saturation In and Around the Scaffolds	Preclinical, noninvasive imaging of tissue engineering polymeric scaffold structure and/or the physiological processes such as blood oxygenation remai

April 22, 2014	Multifunctional Albumin–MnO ₂ 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 16, 2014	Aggregate Enhanced Trimodal Porphyrin Shell Microbubbles for Ultrasound, Photoacoustic, and Fluorescence Imaging	Microbubbles (MBs) are currently used as ultrasound (US) contrast agents and as delivery vehicles for site-specific US-triggered drug and gene deliver
March 01, 2014	Ultrasound-guided photoacoustic imaging: current state and future development	Photoacoustic imaging, frequently coregistered with ultrasonic imaging, can provide functional and cellular/ molecular information about tissue within
January 28, 2014	Indocyanine Green-Loaded Photoacoustic Nanodroplets: Dual Contrast Nanoconstructs for Enhanced Photoacoustic and Ultrasound Imaging	Recently, perfluorocarbon (PFC) nanodroplets were introduced as contrast agents for imaging and image-guided therapy.
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	Detection of Melanoma Metastases in Resected Human Lymph Nodes by Noninvasive Multispectral Photoacoustic Imaging	Objective .
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	Real-Time Assessment of Tissue Hypoxia In Vivo with Combined Photoacoustics and High-Frequency Ultrasound	In preclinical cancer studies, non-invasive functional imaging has become an important tool to assess tumor development and therapeutic effects.
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.
December 26, 2013	Imaging of an Inflammatory Injury in the Newborn Rat Brain with Photoacoustic Tomography	BACKGROUND: The precise assessment of cerebral saturation changes during an inflammatory injury in the developing brain, such as seen in periventricul
November 15, 2013	Silica-coated gold nanoplates as stable photoacoustic contrast agents for sentinel lymph n[1] G. P. Luke, A. Bashyam, K. a Homan, S. Makhija, Y.-S. Chen, and S. Y. Emelianov, "Silica-coated gold nanoplates as stable photoacoustic contrast agents for senti	A biopsy of the first lymph node to which a tumor drains-the sentinel lymph node (SLN)-is commonly performed to identify micrometastases.
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.
October 31, 2013	Non-invasive Monitoring of Ultrasound-Stimulated Microbubble Radiation Enhancement Using Photoacoustic Imaging	Modulation of the tumour microvasculature has been demonstrated to affect the effectiveness of radiation, stimulating the search for anti-angiogenic a

September 25, 2013	Development and Application of Stable Phantoms for the Evaluation of Photoacoustic Imaging Instruments	Photoacoustic imaging combines the high contrast of optical imaging with the spatial resolution and penetration depth of ultrasound.
July 01, 2013	Photoacoustic imaging of the bladder: a pilot study.	Photoacoustic imaging is a promising new technology that combines tissue optical characteristics with ultrasound transmission and can potentially visu
May 07, 2013	Modulation of photoacoustic signal generation from metallic surfaces	The ability to image metallic implants is important for medical applications ranging from diagnosis to therapy.
May 01, 2013	Development and initial application of a fully integrated photoacoustic micro-ultrasound system	Photoacoustic (PA) imaging for biomedical applications has been under development for many years.
May 01, 2013	Optical wavelength selection for improved spectroscopic photoacoustic imaging	Spectroscopic photoacoustic imaging has the potential to become a powerful tool that can estimate distributions of optically absorbing chromophores in
March 15, 2013	Molecular Photoacoustic Imaging of Follicular Thyroid Carcinoma	PURPOSE: To evaluate the potential of targeted photoacoustic imaging as a noninvasive method for detection of follicular thyroid carcinoma.
March 14, 2013	A Spinal Cord Window Chamber Model for In Vivo Longitudinal Multimodal Optical and Acoustic Imaging in a Murine Model	In vivo and direct imaging of the murine spinal cord and its vasculature using multimodal (optical and acoustic) imaging techniques could significantl
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 atherosclero- tic plaques.
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	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	A versatile method for the preparation of poly-acrylamide derivative functionalized thermo-responsive gold nanoparticles	Abstract: Herein we report the synthesis of a resilient nanosystem based on silica-coated magnetic MnFe ₂ O ₃ nanoparticles conjugated to fluorescein and
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.
October 01, 2012	Photoacoustic Imaging for Medical Diagnostics	
July 11, 2012	A Facile, One-Step Nanocarbon Functionalization for Biomedical Applications	Despite their immense potential in biomedicine, carbon nanomaterials suffer from inefficient dispersion and biological activity in vivo.
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.

February 09, 2012	Photoacoustic characterization of radiofrequency ablation lesions	Radiofrequency ablation (RFA) procedures are used to destroy abnormal electrical pathways in the heart that can cause cardiac arrhythmias.
February 03, 2012	Biomedical Applications of Photoacoustic Imaging with Exogenous Contrast Agents	Photoacoustic imaging is a biomedical imaging modality that provides functional information, and, with the help of exogenous contrast agents, cellular
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	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 potentia
January 01, 2010	Development and Validation of a Combined Photoacoustic Micro-Ultrasound System for In Vivo Oxygen Saturation Estimation	Photoacoustic (PA) Imaging can estimate the spatial distribution of oxygen saturation (sO ₂) and total hemoglobin concentration (HbT) in blood, and be