Ken Gall

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Bio

Ken Gall is a tenured Professor of Mechanical Engineering and Materials Science and Orthopedic Surgery at Duke University and an active entrepreneur in the medical device space. He received his BS, MS and PhD from the University of Illinois in Mechanical Engineering. His expertise is in engineering design and materials science with a particular emphasis on the creation, modification, understanding, and commercialization of synthetic biomaterials. On the academic side his research has been cited approximately 27,000 times with an H-index of 87. He has been a co-founder of 10 companies and a director of 15 different early stage ventures. To date, his startup companies have been acquired through a series of five different transactions: Vertera (Nuvasive), MedShape (Conmed), MedShape (Enovis), Kinos (restor3d), and InnAVasc (W. L. Gore). One of his companies (restor3d) has acquired three other businesses: Kinos (private), Nushoco (private), and Conformis (public) and since spinning out of Duke in 2017, is a private orthopedic company with anticipated 2026 revenue of $105M.

Education

PhD	1998	Mechanical Engineering	University of Illinois at Urbana Champaign
MS	1996	Mechanical Engineering	University of Illinois at Urbana Champaign
BS	1995	Mechanical Engineering	University of Illinois at Urbana Champaign

Startup	**Role**	**Status**
Vertera	Founder, Past Director	Acquired by Nuvasive (NUVA)
MedShape	Founder, Past Director, CTO	Acquired by Conmed (CNMD) and Enovis (ENOV)
Biorez	Advisor	Acquired by Conmed (CNMD)
Kinos	Past Director	Acquired by restor3d
InnAVasc	Founder, Past Director	Acquired by W. L. Gore & Associates
Restor3d	Founder, Director, CCO	Commercial Stage
DeepBlue	Founder, Past Director	Commercial Stage
Protect3d	Director	Commercial Stage
StrideLink	Past Director	Commercial Stage
Pressio	Founder, Past Director	Commercial Stage
Huxley	Founder, Director	Pre FDA 510(k) clearance
Penderia	Founder, Director	Pre FDA 510(k) clearance
Sonovascular	Past Director	Pre FDA 510(k) clearance
Orthobond	Director	Pre FDA de Novo clearance
Reselute	Founder, Director	Pre FDA de Novo clearance

Academic Appointments

2021-Current	Board Member	Phil and Penny Knight Campus
2016-Current	Professor	Orthopaedic Surgery, Duke University
2015-Current	Professor	MEMS Department, Duke University
2015-2021	Associate Director	MEDx, Duke University
2019-2022	Associate Dean	Entrepreneurship, Duke University
2015-2019	Chair	MEMS Department, Duke University

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2007-2015	Professor	Georgia Institute of Technology
2005-2007	Associate Professor	Georgia Institute of Technology
2003-2005	Associate Professor	University of Colorado at Boulder
1999-2003	Assistant Professor	University of Colorado at Boulder
1998-1999	Post-Doc	Sandia National Laboratories
1995-1998	Research Assistant	University of Illinois at Urbana-Champaign

Academic Leadership

Associate Dean, Entrepreneurship, Pratt School of Engineering

As Associate Dean, reporting directly to the Dean of the Pratt School of Engineering, Professor Gall co-founded (with Bill Walker, PhD) the Duke Engineering Entrepreneurship (EngEn) program which created and currently houses the Sondland/Durant Center for Entrepreneurship and The Christensen Family Center for Innovation. These programs are aimed at teaching engineering students design and innovation and providing them collaborative space to conceive and build their new commercial ideas. As Dean, Professor Gall also worked with Duke during the formation of the Office of Translation and Commercialization (OTC) and continues to work closely with Duke Capital Partners (formerly Duke Angel Network) which became a part of OTC during his tenure as associate dean in Pratt.

Department Chair, MEMS, Duke Pratt School of Engineering

As department chair Professor Gall grew the MEMS department from 27 to 40 faculty in a four-year period. This includes key senior hires of Professor Cate Brinson, Professor Michael Rubinstein, Professor Shyni Varghese, Professor Christine Payne, and Professor Tony Huang. Professor Gall also built the MEMS department from a near neutral budget to one generating approximately $1M a year due to substantial growth in student and research programs. Professor Gall works closely with faculty to encourage and reward startup companies, with four new companies coming out of MEMS during his time as chair. During his tenure as chair, the number of PhD student applicants doubled from 144 students in 2014 to over 300 students in 2017, a number that was held at about 150 for a decade. Finally, he worked with the provost's office on a new science and technology initiative that brought further growth in the areas of computing, robotics, and materials to the department.

MEDx, Associate Director

In collaboration with the Duke School of Medicine (SOM) Professor Gall co-directs the MEDx program with a professor in the SOM. MEDx is a campus wide initiative aimed at uniting the medical school and engineering school. We have built multiple programs within the MEDx framework including a seed grant program that has funded a dozen new collaborations between engineering and SOM, a vibrant competition to link surgeons and physicians to senior design teams in engineering, and a new program in engineering pulmonology funded by a Duke alumni donor. MEDx also serves an important role as a match maker between the over 1,000 faculty in the SOM and 120 faculty in the Pratt School of Engineering.

Federal and Industry Grants

Professor Gall has fundraising experience through government agencies, in particular the National Science Foundation (NSF) and the National Institute of Health (NIH), and the commercial sector including numerous industrial grants. His grants include both basic research awards aimed at new fundamental science and Small Business Innovation in Research awards (SBIR) aimed at hastening technology commercialization. He has been a PI, Co-PI or consultant on over 60 grants over the past 24 years.

Awards

Professor Gall has received several dozen national and international research and teaching awards including the Presidential Early Career Award for Scientists and Engineers (PECASE), the TMS Robert Lansing Hardy Award, and the ASME Gold Medal, all given to top young scientists in their field. He also recently received the Curtis McGraw Award from ASEE given for excellence in publication for a scientist under 40

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years of age. His teaching awards include the ASM Bradley Stoughton Award and numerous campus wide awards at both Georgia Tech (Senior Faculty Outstanding Undergraduate Research Mentor Award) and the University of Colorado (Sullivan-Carlson Innovation in Teaching Award) .

Graduate Students Advised

Caroline Alting	PhD Current Duke	3D printed materials with sensor integration
Jake Peloquin	PhD Current, Duke	Machine Learning approaches to predicting the stress strain of 3D printed porous structures
Amanda Heimbrook	PhD Current, Duke	3D printing of durable surface porosity on metallic materials
Niusha Daneshdoost	PhD, Current, Duke	Soft tissue materials for repair of pelvic organ prolapse
Bijan Abar	PhD 2023, Duke	Antibiotic release from 3d printed polymers
Katie Nelson	PhD, 2022, Duke	Multiaxial behavior of 3D printed CoCr and Titanium Materials
Emilio Bachtiar	PhD, 2022, Duke	3D printed soft biodegradable and composite polymers
Will Koshut	PhD, 2021, Duke	Reinforcement and Durability of tough PVA hydrogels
Natalia Von Windheim	PhD, 2021, Duke	3D printed PEEK tissue scaffolds
Brian Allen	PhD, 2020, Duke	Antibiotic release from 3D printed scaffolds
Cambre Kelly	PhD, 2020, Duke	3D printed metal tissue scaffolds
Dalton Sycks	PhD, 2017, Duke	Development of Mechanically Robust 3D-Printable Photopolymers
Andy Miller	PhD, 2017, GaTech	Fatigue and cyclic loading of 3D printed soft polymers for orthopedic applications
Brennan Torstrick	PhD, 2017, GaTech	Effects of Surface Chemistry and Surface Topography on Poly-Ether-Ether-Keytone Osseointegration
Nathan Evans	PhD, 2016, GaTech	Processing-structure-property relationships of surface porous polymers for orthopedic applications
Reza Mirzaeifar	PhD, 2013, GaTech	A multiscale study of NiTi Shape Memory Alloys
Yuan Zhong	PhD, 2012, Gatech	Nanomechanics of plasticity in ultra-strength metals and shape memory alloys
Mary Pitz	MS, 2011, Gatech	Compression-Aided stability of Orthopedic Devices
David Safranski	PhD, 2010, Gatech	Poly(beta-amino esters) for cardiovascular applications

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Kathryn Smith	PhD, 2010, Gatech	Tailoring the toughness and Biological Response of Photopolymerizable Networks for Orthopedic Applications
Bhaskar Pant	MS, 2010, Gatech	Experimental nanomechanics of 1D nanostructures
Alicia Ortega	PhD, 2010, Gatech	Structure-property relationships in photopolymerizable polymer networks.
Walter Voit	PhD, 2009, Gatech	Optimization of Mechanical Properties and Manufacturing Techniques to Enable Shape Memory Polymer Processing
Scott Kasprzak	PhD, 2009, Gatech	Small-Scale Polymer Structures Enabled by Thiol-Ene Copolymer Systems.
Matthew DiPrima	PhD, 2009, Gatech	Thermo-Mechanical and Micro-Structural Characterization of Shape memory Polymer Foams.
Heidi F. Khalil	MS, 2009, Gatech	Changes in the mechanical behavior of Nitinol following variations of heat treatment duration and temperature
Greg Vialle	MS, 2009, Gatech	Inductive Activation of Magnetite Filled Shape Memory Polymers
Brian Lin	MS, 2009, Gatech	Structure and Thermomechanical Behavior of NiTiPt Shape Memory Alloy Wires.
Edem Wornyo	PhD, 2008, Gatech	Nanomechanics of Shape Memory Polymers.
David Safranski	MS, 2008, Gatech	Effect of Chemical Structure and Crosslinking Density on the Thermo-Mechanical Properties and Toughness of (Meth)Acrylate Shape Memory Polymer Networks.
Terra Keim	MS, 2007, Gatech	Synthesis, Characterization, and Cyclic Stress-Influenced Degradation of a Poly(ethylene)glycol based Poly(beta-amino ester)
Austin Leach	PhD, 2007, Gatech	Atomistic Modeling of the Mechanical Behavior of Nanometer Scale Metals.
Chris Yakacki	PhD, 2007, Colorado	Shape-Memory Polymers for Biomedical Applications: An Investigation into Thermomechanics, Recovery Characteristics, and Cytocompatibility.
David Miller	PhD, 2007, Colorado	Galvanic Corrosion-Induced Damage of Miniaturized Silicon Structures.

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Jeff Tyber	MS, 2005, Colorado	Mechanical Behavior of Materials for Reconstructive Bioengineering Applications.
Carl Frick	PhD, 2005, Colorado	Processing, Structure, and Property Relationships in NiTi Shape Memory Alloys at Multiple Length Scales.
Yiping Liu	PhD, 2004, Colorado	Thermomechancis of Shape Memory Polymers.
Jiankuai Diao	PhD, 2004, Colorado	Atomistic and Continuum Modeling of the Structure and Mechanical Properties of Metal Nanowires.
Alicia Ortega	MS, 2004, Colorado	Cast NiTi Shape Memory Alloys.
Neil West	MS, 2003, Colorado	Factors Affecting Creep in Gold on Polysilicon Bi-layer Cantilevered MEMS Beams.
Kevin Juntunen	MS, 2001, Colorado	Effects of Precipitate Size and Surface Normal Orientation on Micro-Indentation and Compressive Fatigue of NiTi Shape Memory Alloys.
Brian Corff	MS, 2000, Colorado	High Strain Rate Damage in Ductile Metals.

University Course Instruction

Duke University, 2015-Current

Students provide individual course evaluations online at the end of a course. The maximum score on a question is 5.0 (Strongly Agree) and the minimum is 1.0 (Strongly Disagree), and interpolated medial values are presented. The overall measure for teaching effectiveness is captured in the "Instructor Effectiveness" score.

Year	*Term*	*Course Title*	*Enrollment*	*Quality of Instructor*
2016	Spring	Structure and Properties of Solids	33	4.8
2018	Fall	Freshman Design Projects	45	N/A
2019	Fall	Startup Fundamentals and Strategy	9	N/A

Georgia Institute of Technology, 2005-2015

Students provide individual Course Instructor Opinion Surveys (CIOS) online at the end of a course. The maximum score on a question is 5.0 (Strongly Agree) and the minimum is 1.0 (Strongly Disagree), and interpolated medial values are presented. The overall measure for teaching effectiveness is captured in the "Instructor Effectiveness" score. The symbols U and G designate Undergraduate and Graduate courses, respectively.

Year	*Term*	*Course Title*	*Enrollment*	*Instructor Effectiveness*
2015	Spring	Mech Behavior of Materials (U/G)	59	5.0
2015	Spring	Materials Entrepreneurship (U/G)	17	4.8
2014	Fall	Engineering Materials (U)	99	4.8
2014	Spring	Materials Entrepreneurship (U/G)	42	4.8
2014	Spring	Engineering Materials (U)	106	4.9
2013	Fall	Engineering Materials (U)	106	4.8
2013	Spring	Engineering Materials (U)	100	4.8
2012	Fall	Engineering Materials (U)	97	4.8
2012	Spring	Engineering Materials (U)	97	4.9
2011	Fall	Engineering Materials (U)	95	4.9

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2011	Spring	Engineering Materials (U)	85	4.9
2010	Fall	Engineering Materials (U)	96	4.9
2010	Spring	Mech Behavior of Materials (U/G)	57	4.9
2009	Fall	Engineering Materials (U)	99	5.0
2008	Spring	Engineering Materials (U)	100	4.8
2008	Spring	Engineering Materials (U)	101	4.9
2007	Spring	Engineering Materials (U)	112	4.8
2007	Spring	Engineering Materials (U)	117	4.9
2006	Spring	Engineering Materials (U)	88	4.9
2006	Spring	Nanomaterials (U)	14	4.5 (team taught)
2006	Spring	Nanomaterials (G)	12	4.3 (team taught)

University of Colorado, 1999-2005
Students provide individual course and instructor Faculty Course Questionnaire (FCQ) ratings anonymously. The cited "Course" and "Instructor" *overall* ratings are computed from the average of individual student rankings from a range of 0.0 (very poor) to 4.0 (very good). The symbols U and G designates Undergraduate and Graduate courses, respectively, and # is the number of students enrolled in the course.

Year	*Term*	*Course Title*	#	*Instructor*	*Course*
2004	Fall	Failure of Materials (U/G)	120	3.96 (A+)	3.85 (A)
2004	Spring	Material Science (U)	174	3.96(A+)	3.89 (A+)
2003	Fall	Failure of Materials (U/G)	93	3.95 (A+)	3.84 (A)
2003	Spring	Freshman Projects (U)	32	3.85 (A)	3.85 (A)
2002	Fall	Failure of Materials (U/G)	77	3.97 (A+)	3.87 (A)
2002	Spring	Freshman Projects (U)	33	3.88 (A+)	3.85 (A)
2001	Fall	Failure of Materials (U/G)	60	3.90 (A+)	3.83 (A)
2001	Fall	Materials Science I (G)	19	3.78 (A)	3.67 (A)
2001	Spring	Freshman Projects (U)	19	3.93 (A+)	4.00 (A+)
2000	Fall	Failure of Materials (U/G)	33	4.00 (A+)	3.96 (A+)
2000	Spring	Freshman Projects (U)	30	3.96 (A+)	3.75 (A)
1999	Fall	Materials Science I (G)	19	3.89 (A+)	3.67 (A)

Publications and Patents Via Google Scholar
Attached

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Ken Gall

Professor of Mechanical Engineering and Materials Science,
Duke

Mechanics of Materials
Biomaterials
Shape Memory Alloys
Shape Memory Polymers
3D printing

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	All	Since 2021
Citations	30974	10596
h-index	93	55
i10-index	242	181

23 articles not available | 52 articles available

Based on funding mandates

TITLE	CITED BY	YEAR
Thermomechanics of shape memory polymers: uniaxial experiments and constitutive modeling Y Liu, K Gall, ML Dunn, AR Greenberg, J Diani International Journal of Plasticity 22 (2), 279-313	990	2006
Temperature and strain-rate dependence of surface dislocation nucleation T Zhu, J Li, A Samanta, A Leach, K Gall Physical Review Letters 100 (2), 025502	918	2008
Unconstrained recovery characterization of shape-memory polymer networks for cardiovascular applications CM Yakacki, R Shandas, C Lanning, B Rech, A Eckstein, K Gall Biomaterials 28 (14), 2255-2263	768	2007
Surface-stress-induced phase transformation in metal nanowires J Diao, K Gall, ML Dunn Nature materials 2 (10), 656-660	634	2003
Stress-induced chemical detection using flexible metal− organic frameworks MD Allendorf, RJT Houk, L Andruszkiewicz, AA Talin, J Pikarsky, ... Journal of the American Chemical Society 130 (44), 14404-14405	602	2008
Shape memory polymer nanocomposites K Gall, ML Dunn, Y Liu, D Finch, M Lake, NA Munshi Acta Materialia 50 (20), 5115-5126	579	2002
Cyclic deformation mechanisms in precipitated NiTi shape memory alloys K Gall, HJ Maier Acta Materialia 50 (18), 4643-4657	577	2002
Tension–compression asymmetry of the stress–strain response in aged single crystal and polycrystalline NiTi K Gall, H Sehitoglu, YI Chumlyakov, IV Kireeva Acta Materialia 47 (4), 1203-1217	551	1999
Deformation of single crystal Hadfield steel by twinning and slip I Karaman, H Sehitoglu, K Gall, YI Chumlyakov, HJ Maier Acta materialia 48 (6), 1345-1359	536	2000
Finite strain 3D thermoviscoelastic constitutive model for shape memory polymers	492	2006

TITLE	CITED BY	YEAR
J Diani, Y Liu, K Gall Polymer Engineering & Science 46 (4), 486-492		
Microstructure-based fatigue modeling of cast A356-T6 alloy DL McDowell, K Gall, MF Horstemeyer, J Fan Engineering Fracture Mechanics 70 (1), 49-80	491	2003
The role of texture in tension–compression asymmetry in polycrystalline NiTi K Gall, H Sehitoglu International Journal of Plasticity 15 (1), 69-92	466	1999
Strong, tailored, biocompatible shape-memory polymer networks CM Yakacki, R Shandas, D Safranski, AM Ortega, K Sassaman, K Gall Advanced functional materials 18 (16), 2428-2435	465	2008
Thermomechanics of the shape memory effect in polymers for biomedical applications K Gall, CM Yakacki, Y Liu, R Shandas, N Willett, KS Anseth Journal of Biomedical Materials Research Part A: An Official Journal of The …	445	2005
Compressive response of NiTi single crystals H Sehitoglu, I Karaman, R Anderson, X Zhang, K Gall, HJ Maier, ... Acta materialia 48 (13), 3311-3326	419	2000
Deformation of FCC nanowires by twinning and slip HS Park, K Gall, JA Zimmerman Journal of the Mechanics and Physics of Solids 54 (9), 1862-1881	418	2006
Atomistic simulation of the structure and elastic properties of gold nanowires J Diao, K Gall, ML Dunn Journal of the Mechanics and Physics of Solids 52 (9), 1935-1962	411	2004
Fabrication of biomedical scaffolds using biodegradable polymers A Kirillova, TR Yeazel, D Asheghali, SR Petersen, S Dort, K Gall, ... Chemical reviews 121 (18), 11238-11304	409	2021
Shape memory and pseudoelasticity in metal nanowires HS Park, K Gall, JA Zimmerman Physical Review Letters 95 (25), 255504	377	2005
Thermomechanics of shape memory polymer nanocomposites Y Liu, K Gall, ML Dunn, P McCluskey Mechanics of Materials 36 (10), 929-940	375	2004
The strength of gold nanowires K Gall, J Diao, ML Dunn Nano Letters 4 (12), 2431-2436	373	2004
A synthetic hydrogel composite with the mechanical behavior and durability of cartilage F Yang, J Zhao, WJ Koshut, J Watt, JC Riboh, K Gall, BJ Wiley Advanced Functional Materials 30 (36), 2003451	360	2020

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Effect of chemical structure and crosslinking density on the thermo-mechanical properties and toughness of (meth) acrylate shape memory polymer networks DL Safranski, K Gall Polymer 49 (20), 4446-4455	337	2008
Atomistic simulations of the yielding of gold nanowires J Diao, K Gall, ML Dunn, JA Zimmerman Acta Materialia 54 (3), 643-653	324	2006
Fatigue behavior of As-built selective laser melted titanium scaffolds with sheet-based gyroid microarchitecture for bone tissue engineering CN Kelly, J Francovich, S Julmi, D Safranski, RE Guldberg, HJ Maier, ... Acta biomaterialia 94, 610-626	322	2019
Carbon fiber reinforced shape memory polymer composites K Gall, M Mikulas, NA Munshi, F Beavers, M Tupper Journal of intelligent material systems and structures 11 (11), 877-886	319	2000
Graft Fixation Device K Gall, J Tyber, C Yakacki, R Bartz US Patent App. 10/598,080	314	2008
High-strain shape-memory polymers W Voit, T Ware, RR Dasari, P Smith, L Danz, D Simon, S Barlow, ... Advanced functional materials 20 (1), 162-171	312	2010
Thermal processing of polycrystalline NiTi shape memory alloys CP Frick, AM Ortega, J Tyber, AEM Maksound, HJ Maier, Y Liu, K Gall Materials Science and Engineering: A 405 (1-2), 34-49	306	2005
Substrate stiffness controls osteoblastic and chondrocytic differentiation of mesenchymal stem cells without exogenous stimuli R Olivares-Navarrete, EM Lee, K Smith, SL Hyzy, M Doroudi, JK Williams, ... PloS one 12 (1), e0170312	286	2017
Yield strength asymmetry in metal nanowires J Diao, K Gall, ML Dunn Nano Letters 4 (10), 1863-1867	277	2004
The mechanical properties of atomic layer deposited alumina for use in micro- and nano-electromechanical systems MK Tripp, C Stampfer, DC Miller, T Helbling, CF Herrmann, C Hierold, ... Sensors and Actuators A: Physical 130, 419-429	261	2006
Porous PEEK improves the bone-implant interface compared to plasma-sprayed titanium coating on PEEK FB Torstrick, ASP Lin, D Potter, DL Safranski, TA Sulchek, K Gall, ... Biomaterials 185, 106-116	258	2018
High-strength, surface-porous polyether-ether-ketone for load-bearing orthopedic implants NT Evans, FB Torstrick, CSD Lee, KM Dupont, DL Safranski, WA Chang, ...	239	2015

TITLE	CITED BY	YEAR
Acta biomaterialia 13, 159-167		
Osteosynthetic implants and methods of use and manufacture KA Gall, JA Tyber, DJ Pacaccio US Patent 7,985,222	236	2011
Shape memory and pseudoelastic behavior of 51.5% Ni–Ti single crystals in solutionized and overaged state H Sehitoglu, J Jun, X Zhang, I Karaman, Y Chumlyakov, HJ Maier, K Gall Acta Materialia 49 (17), 3609-3620	233	2001
Instrumented micro-indentation of NiTi shape-memory alloys K Gall, K Juntunen, HJ Maier, H Sehitoglu, YI Chumlyakov Acta Materialia 49 (16), 3205-3217	232	2001
In Vivo Penetration Mechanics and Mechanical Properties of Mouse Brain Tissue at Micrometer Scales AA Sharp, AM Ortega, D Restrepo, D Curran-Everett, K Gall IEEE transactions on biomedical engineering 56 (1), 45-53	227	2008
High cycle fatigue of a die cast AZ91E-T4 magnesium alloy MF Horstemeyer, N Yang, K Gall, DL McDowell, J Fan, PM Gullett Acta Materialia 52 (5), 1327-1336	227	2004
Atomistic simulations on the tensile debonding of an aluminum–silicon interface K Gall, MF Horstemeyer, M Van Schilfgaarde, MI Baskes Journal of the Mechanics and Physics of Solids 48 (10), 2183-2212	223	2000
Shape-memory polymers for microelectromechanical systems K Gall, P Kreiner, D Turner, M Hulse Journal of microelectromechanical systems 13 (3), 472-483	220	2004
On the mechanical behavior of single crystal NiTi shape memory alloys and related polycrystalline phenomenon K Gall, H Sehitoglu, R Anderson, I Karaman, YI Chumlyakov, IV Kireeva Materials Science and Engineering: A 317 (1-2), 85-92	217	2001
Surface stress driven reorientation of gold nanowires J Diao, K Gall, ML Dunn Physical Review B—Condensed Matter and Materials Physics 70 (7), 075413	203	2004
Design and structure–function characterization of 3D printed synthetic porous biomaterials for tissue engineering CN Kelly, AT Miller, SJ Hollister, RE Guldberg, K Gall Advanced healthcare materials 7 (7), 1701095	201	2018
The debonding and fracture of Si particles during the fatigue of a cast Al-Si alloy K Gall, N Yang, M Horstemeyer, DL McDowell, J Fan Metallurgical and Materials Transactions A 30 (12), 3079-3088	199	1999
On the elastic modulus of metallic nanowires	196	2008

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Shape-memory polymers for biomedical applications CM Yakacki, K Gall Shape-memory polymers, 147-175	193	2009
Shape memory mechanics of an elastic memory composite resin ER Abrahamson, MS Lake, NA Munshi, K Gall Journal of intelligent material systems and structures 14 (10), 623-632	193	2003
Cyclic plasticity at pores and inclusions in cast Al–Si alloys J Fan, DL McDowell, MF Horstemeyer, K Gall Engineering Fracture Mechanics 70 (10), 1281-1302	193	2003
Internal stress storage in shape memory polymer nanocomposites K Gall, ML Dunn, Y Liu, G Stefanic, D Balzar Applied Physics Letters 85 (2), 290-292	190	2004
Deformation of Top-Down and Bottom-Up Silver Nanowires AM Leach, M McDowell, K Gall Advanced Functional Materials 17 (1), 43-53	186	2007
Effect of microstructure on the fatigue of hot-rolled and cold-drawn NiTi shape memory alloys K Gall, J Tyber, G Wilkesanders, SW Robertson, RO Ritchie, HJ Maier Materials Science and Engineering: A 486 (1-2), 389-403	183	2008
Shape-memory polymer networks with Fe_3O_4 nanoparticles for remote activation CM Yakacki, NS Satarkar, K Gall, R Likos, JZ Hilt Journal of applied polymer science 112 (5), 3166-3176	181	2009
Stress-induced martensitic transformations and shape memory at nanometer scales CP Frick, TW Lang, K Spark, K Gall Acta Materialia 54 (8), 2223-2234	176	2006
High-strength, porous additively manufactured implants with optimized mechanical osseointegration CN Kelly, T Wang, J Crowley, D Wills, MH Pelletier, ER Westrick, ... Biomaterials 279, 121206	174	2021
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On the driving force for fatigue crack formation from inclusions and voids in a cast A356 aluminum alloy K Gall, MF Horstemeyer, BW Degner, DL McDowell, J Fan International journal of fracture 108 (3), 207-233	164	2001
Shape-memory polymer coated electrodes	161	2010

TITLE	CITED BY	YEAR
D Finch, K Gall, A Sharp, D Restrepo US Patent 7,689,260		
Effect of porous orthopaedic implant material and structure on load sharing with simulated bone ingrowth: a finite element analysis comparing titanium and PEEK RD Carpenter, BS Klosterhoff, FB Torstrick, KT Foley, JK Burkus, CSD Lee, ... Journal of the mechanical behavior of biomedical materials 80, 68-76	160	2018
Deformation limits in shape-memory polymers CM Yakacki, S Willis, C Luders, K Gall Advanced Engineering Materials 10 (1-2), 112-119	160	2008
Thermomechanical recovery couplings of shape memory polymers in flexure Y Liu, K Gall, ML Dunn, P McCluskey Smart materials and structures 12 (6), 947-954	160	2003
Detwinning in NiTi alloys H Sehitoglu, R Hamilton, D Canadinc, XY Zhang, K Gall, I Karaman, ... Metallurgical and Materials Transactions A 34 (1), 5-13	157	2003
Bending and tensile deformation of metallic nanowires MT McDowell, AM Leach, K Gall Modelling and Simulation in Materials Science and engineering 16 (4), 045003	154	2008
Finite element analysis of the stress distributions near damaged Si particle clusters in cast Al–Si alloys K Gall, M Horstemeyer, DL McDowell, J Fan Mechanics of Materials 32 (5), 277-301	151	2000
A metallization and bonding approach for high performance carbon nanotube thermal interface materials R Cross, BA Cola, T Fisher, X Xu, K Gall, S Graham Nanotechnology 21 (44), 445705	148	2010
Cyclic deformation behavior of single crystal NiTi H Sehitoglu, R Anderson, I Karaman, K Gall, Y Chumlyakov Materials Science and Engineering: A 314 (1-2), 67-74	148	2001
Thermo-mechanical behavior of epoxy shape memory polymer foams MA Di Prima, M Lesniewski, K Gall, DL McDowell, T Sanderson, ... Smart Materials and Structures 16 (6), 2330-2340	146	2007
The role of intergranular constraint on the stress-induced martensitic transformation in textured polycrystalline NiTi K Gall, TJ Lim, DL McDowell, H Sehitoglu, YI Chumlyakov International Journal of Plasticity 16 (10-11), 1189-1214	146	2000
Multiscale structure and properties of cast and deformation processed polycrystalline NiTi shape-memory alloys CP Frick, AM Ortega, J Tyber, K Gall, HJ Maier Metallurgical and Materials Transactions A 35 (7), 2013-2025	145	2004

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Toward a self-deploying shape memory polymer neuronal electrode AA Sharp, HV Panchawagh, A Ortega, R Artale, S Richardson-Burns, ... Journal of neural engineering 3 (4), L23-L30	143	2006
The effect of surface topography and porosity on the tensile fatigue of 3D printed Ti-6Al-4V fabricated by selective laser melting CN Kelly, NT Evans, CW Irvin, SC Chapman, K Gall, DL Safranski Materials Science and Engineering: C 98, 726-736	142	2019
Atomistic study of nanotwins in NiTi shape memory alloys Y Zhong, K Gall, T Zhu Journal of Applied Physics 110 (3)	136	2011
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