Ivan G Petrov

List of Publications by Year in Descending Order

320 papers	16,618 citations	64 h-index	119 g-index
346 ext. papers	17,819 ext. citations	3.8 avg, IF	6.25 L-index

#	Paper	IF	Citations
320	Oxidation resistance and mechanical properties of sputter-deposited Ti0.9Al0.1B2-y thin films. *Surface and Coatings Technology*, **2022**, 128187	4.4	1
319	Dense, single-phase, hard, and stress-free TiAlWN films grown by magnetron sputtering with dramatically reduced energy consumption.. *Scientific Reports*, **2022**, 12, 2166	4.9	2
318	Improving oxidation and wear resistance of TiB2 films by nano-multilayering with Cr. *Surface and Coatings Technology*, **2022**, 436, 128337	4.4	0
317	Microstructure, mechanical, and corrosion properties of Zr1-xCrxBy diboride alloy thin films grown by hybrid high power impulse/DC magnetron co-sputtering. *Applied Surface Science*, **2022**, 591, 153164	6.7	0
316	Effect of low-energy ion assistance on the properties of sputtered ZrB2 films. *Vacuum*, **2021**, 195, 110688	3.7	0
315	X-ray photoelectron spectroscopy analysis of TiBx (1.3 ≤ x ≤ 3.0) thin films. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2021**, 39, 023403	2.9	4
314	Dense Ti0.67Hf0.33B1.7 thin films grown by hybrid HfB2-HiPIMS/TiB2-DCMS co-sputtering without external heating. *Vacuum*, **2021**, 186, 110057	3.7	4
313	Toward energy-efficient physical vapor deposition: Routes for replacing substrate heating during magnetron sputter deposition by employing metal ion irradiation. *Surface and Coatings Technology*, **2021**, 415, 127120	4.4	7
312	Synthesis and characterization of CrB2 thin films grown by DC magnetron sputtering. *Scripta Materialia*, **2021**, 200, 113915	5.6	3
311	Age hardening in superhard ZrB2-rich Zr1-xTaxBy thin films. *Scripta Materialia*, **2021**, 191, 120-125	5.6	9
310	Where is the unpaired transition metal in substoichiometric diboride line compounds?. *Acta Materialia*, **2021**, 204, 116510	8.4	9
309	Multifunctional ZrB2-rich Zr1-xCrxBy thin films with enhanced mechanical, oxidation, and corrosion properties. *Vacuum*, **2021**, 185, 109990	3.7	8
308	Improved oxidation properties from a reduced B content in sputter-deposited TiBx thin films. *Surface and Coatings Technology*, **2021**, 420, 127353	4.4	7
307	Towards energy-efficient physical vapor deposition: Mapping out the effects of W+ energy and concentration on the densification of TiAlWN thin films grown with no external heating. *Surface and Coatings Technology*, **2021**, 424, 127639	4.4	6
306	Systematic compositional analysis of sputter-deposited boron-containing thin films. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2021**, 39, 063408	2.9	8
305	Thermally induced structural evolution and age-hardening of polycrystalline V1−xMoxN (x ≤ 0.4) thin films. *Surface and Coatings Technology*, **2021**, 405, 126723	4.4	4
304	Microstructure and materials properties of understoichiometric TiBx thin films grown by HiPIMS. *Surface and Coatings Technology*, **2020**, 404, 126537	4.4	16

303	Growth of dense, hard yet low-stress Ti0.40Al0.27W0.33N nanocomposite films with rotating substrate and no external substrate heating. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2020**, 38, 023006	2.9	8
302	The influence of pressure and magnetic field on the deposition of epitaxial TiBx thin films from DC magnetron sputtering. *Vacuum*, **2020**, 177, 109355	3.7	9
301	3D-to-2D Morphology Manipulation of Sputter-Deposited Nanoscale Silver Films on Weakly Interacting Substrates via Selective Nitrogen Deployment for Multifunctional Metal Contacts. *ACS Applied Nano Materials*, **2020**, 3, 4728-4738	5.6	17
300	Adaptive hard and tough mechanical response in single-crystal B1 VNx ceramics via control of anion vacancies. *Acta Materialia*, **2020**, 192, 78-88	8.4	21
299	Preface for the Festschrift Honoring Dr. Steve Rossnagel. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2020**, 38, 051601	2.9	
298	Cubic-structure Al-rich TiAlSiN thin films grown by hybrid high-power impulse magnetron co-sputtering with synchronized Al+ irradiation. *Surface and Coatings Technology*, **2020**, 385, 125364	4.4	5
297	Improving the high-temperature oxidation resistance of TiB2 thin films by alloying with Al. *Acta Materialia*, **2020**, 196, 677-689	8.4	34
296	Self-organized columnar Zr0.7Ta0.3B1.5 core/shell-nanostructure thin films. *Surface and Coatings Technology*, **2020**, 401, 126237	4.4	9
295	Mechanical properties of VMoNO as a function of oxygen concentration: Toward development of hard and tough refractory oxynitrides. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2019**, 37, 061508	2.9	1
294	High-power impulse magnetron sputter deposition of TiBx thin films: Effects of pressure and growth temperature. *Vacuum*, **2019**, 169, 108884	3.7	12
293	TiN film growth on misoriented TiN grains with simultaneous low-energy bombardment: Restructuring leading to epitaxy. *Thin Solid Films*, **2019**, 688, 137380	2.2	3
292	Strategy for simultaneously increasing both hardness and toughness in ZrB2-rich Zr1−TaxBy thin films. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2019**, 37, 031506	2.9	26
291	A review of the intrinsic ductility and toughness of hard transition-metal nitride alloy thin films. *Thin Solid Films*, **2019**, 688, 137479	2.2	31
290	Paradigm shift in thin-film growth by magnetron sputtering: From gas-ion to metal-ion irradiation of the growing film. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2019**, 37, 060801	2.9	55
289	Corrosion Resistant TiTaN and TiTaAlN Thin Films Grown by Hybrid HiPIMS/DCMS Using Synchronized Pulsed Substrate Bias with No External Substrate Heating. *Coatings*, **2019**, 9, 841	2.9	4
288	Time evolution of ion fluxes incident at the substrate plane during reactive high-power impulse magnetron sputtering of groups IVb and VIb transition metals in Ar/N2. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2018**, 36, 020602	2.9	23
287	Effects of surface vibrations on interlayer mass transport: Ab initio molecular dynamics investigation of Ti adatom descent pathways and rates from TiN/TiN(001) islands. *Physical Review B* , **2018**, 97,	3.3	19
286	Controlling the B/Ti ratio of TiBx thin films grown by high-power impulse magnetron sputtering. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2018**, 36, 030604	2.9	30

285	Enhanced TiTaN diffusion barriers, grown by a hybrid sputtering technique with no substrate heating, between Si(001) wafers and Cu overlayers. *Scientific Reports*, **2018**, 8, 5360	4.9	17
284	Elastic properties and plastic deformation of TiC- and VC-based pseudobinary alloys. *Acta Materialia*, **2018**, 144, 376-385	8.4	28
283	Low temperature (Ts/Tm . *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2018**, 36, 061511	2.9	16
282	Self-structuring in ZrAlN films as a function of composition and growth temperature. *Scientific Reports*, **2018**, 8, 16327	4.9	5
281	Growth and mechanical properties of 111-oriented V0.5Mo0.5Nx/Al2O3(0001) thin films. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2018**, 36, 051512	2.9	8
280	Recent developments in surface science and engineering, thin films, nanoscience, biomaterials, plasma science, and vacuum technology. *Thin Solid Films*, **2018**, 660, 120-160	2.2	16
279	V0.5Mo0.5Nx/MgO(001): Composition, nanostructure, and mechanical properties as a function of film growth temperature. *Acta Materialia*, **2017**, 126, 194-201	8.4	16
278	Effects of incident N atom kinetic energy on TiN/TiN(001) film growth dynamics: A molecular dynamics investigation. *Journal of Applied Physics*, **2017**, 121, 025302	2.5	25
277	Controlling the boron-to-titanium ratio in magnetron-sputter-deposited TiBx thin films. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2017**, 35, 050601	2.9	29
276	Low-temperature growth of dense and hard Ti0.41Al0.51Ta0.08N films via hybrid HIPIMS/DC magnetron co-sputtering with synchronized metal-ion irradiation. *Journal of Applied Physics*, **2017**, 121, 171902	2.5	22
275	Control of the metal/gas ion ratio incident at the substrate plane during high-power impulse magnetron sputtering of transition metals in Ar. *Thin Solid Films*, **2017**, 642, 36-40	2.2	16
274	Gas rarefaction effects during high power pulsed magnetron sputtering of groups IVb and VIb transition metals in Ar. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2017**, 35, 060601	2.9	19
273	Phonon and electron contributions to the thermal conductivity of VNx epitaxial layers. *Physical Review Materials*, **2017**, 1,	3.2	28
272	Interpretation of X-ray photoelectron spectra of carbon-nitride thin films: New insights from in situ XPS. *Carbon*, **2016**, 108, 242-252	10.4	94
271	Ab Initio Molecular Dynamics Simulations of Nitrogen/VN(001) Surface Reactions: Vacancy-Catalyzed N2 Dissociative Chemisorption, N Adatom Migration, and N2 Desorption. *Journal of Physical Chemistry C*, **2016**, 120, 12503-12516	3.8	30
270	Effects of phase stability, lattice ordering, and electron density on plastic deformation in cubic TiWN pseudobinary transition-metal nitride alloys. *Acta Materialia*, **2016**, 103, 823-835	8.4	47
269	N and Ti adatom dynamics on stoichiometric polar TiN(111) surfaces. *Surface Science*, **2016**, 649, 72-79	1.8	27
268	Large-scale molecular dynamics simulations of TiN/TiN(001) epitaxial film growth. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2016**, 34, 041509	2.9	23

267	Nitrogen-doped bcc-Cr films: Combining ceramic hardness with metallic toughness and conductivity. *Scripta Materialia*, **2016**, 122, 40-44	5.6	29
266	Growth, nanostructure, and optical properties of epitaxial VNx/MgO(001) (0.80 ≤ x ≤ 1.00) layers deposited by reactive magnetron sputtering. *Journal of Materials Chemistry C*, **2016**, 4, 7924-7938	7.1	24
265	The dynamics of TiNx (x = 1) admolecule interlayer and intralayer transport on TiN/TiN(001) islands. *Thin Solid Films*, **2015**, 589, 133-144	2.2	12
264	Novel hard, tough HfAlSiN multilayers, defined by alternating Si bond structure, deposited using modulated high-flux, low-energy ion irradiation of the growing film. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2015**, 33, 05E103	2.9	5
263	Strategy for tuning the average charge state of metal ions incident at the growing film during HIPIMS deposition. *Vacuum*, **2015**, 116, 36-41	3.7	29
262	Al capping layers for nondestructive x-ray photoelectron spectroscopy analyses of transition-metal nitride thin films. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2015**, 33, 05E101	2.9	24
261	Control of Ti1−xSixN nanostructure via tunable metal-ion momentum transfer during HIPIMS/DCMS co-deposition. *Surface and Coatings Technology*, **2015**, 280, 174-184	4.4	43
260	Self-organized anisotropic (Zr1−xSix)N nanocomposites grown by reactive sputter deposition. *Acta Materialia*, **2015**, 82, 179-189	8.4	23
259	Reflection thermal diffuse x-ray scattering for quantitative determination of phonon dispersion relations. *Physical Review B*, **2015**, 92,	3.3	5
258	Dynamic and structural stability of cubic vanadium nitride. *Physical Review B*, **2015**, 91,	3.3	57
257	Effect of WN content on toughness enhancement in V1−xWxN/MgO(001) thin films. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2014**, 32, 030603	2.9	40
256	Ti adatom diffusion on TiN(001): Ab initio and classical molecular dynamics simulations. *Surface Science*, **2014**, 627, 34-41	1.8	37
255	Strain-free, single-phase metastable Ti0.38Al0.62N alloys with high hardness: metal-ion energy vs. momentum effects during film growth by hybrid high-power pulsed/dc magnetron cosputtering. *Thin Solid Films*, **2014**, 556, 87-98	2.2	58
254	X-ray Photoelectron Spectroscopy Analyses of the Electronic Structure of Polycrystalline Ti1-xAlxN Thin Films with 0 ≤ x ≤ 0.96. *Surface Science Spectra*, **2014**, 21, 35-49	1.2	16
253	Elastic constants, Poisson ratios, and the elastic anisotropy of VN(001), (011), and (111) epitaxial layers grown by reactive magnetron sputter deposition. *Journal of Applied Physics*, **2014**, 115, 214908	2.5	43
252	Ab initio and classical molecular dynamics simulations of N2 desorption from TiN(001) surfaces. *Surface Science*, **2014**, 624, 25-31	1.8	44
251	Electrochemically tunable thermal conductivity of lithium cobalt oxide. *Nature Communications*, **2014**, 5, 4035	17.4	92
250	Si incorporation in Ti1−xSixN films grown on TiN(001) and (001)-faceted TiN(111) columns. *Surface and Coatings Technology*, **2014**, 257, 121-128	4.4	19

249	Ti and N adatom descent pathways to the terrace from atop two-dimensional TiN/TiN(001) islands. *Thin Solid Films*, **2014**, 558, 37-46	2.2	28
248	Vacancy-induced toughening in hard single-crystal V 0.5 Mo 0.5 N x /MgO(0 0 1) thin films. *Acta Materialia*, **2014**, 77, 394-400	8.4	58
247	Structure evolution and properties of TiAlCN/VCN coatings deposited by reactive HIPIMS. *Surface and Coatings Technology*, **2014**, 257, 38-47	4.4	18
246	Novel strategy for low-temperature, high-rate growth of dense, hard, and stress-free refractory ceramic thin films. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2014**, 32, 041515	2.9	35
245	Physical properties of epitaxial ZrN/MgO(001) layers grown by reactive magnetron sputtering. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2013**, 31, 061516	2.9	39
244	Electron/phonon coupling in group-IV transition-metal and rare-earth nitrides. *Journal of Applied Physics*, **2013**, 114, 193708	2.5	30
243	Sputter-cleaned Epitaxial VxMo(1-x)Ny/MgO(001) Thin Films Analyzed by X-ray Photoelectron Spectroscopy: 3. Polycrystalline V0.49Mo0.51N1.02. *Surface Science Spectra*, **2013**, 20, 80-85	1.2	6
242	Improving high-capacity Li1.2Ni0.15Mn0.55Co0.1O2-based lithium-ion cells by modifiying the positive electrode with alumina. *Journal of Power Sources*, **2013**, 233, 346-357	8.9	127
241	Stretchable batteries with self-similar serpentine interconnects and integrated wireless recharging systems. *Nature Communications*, **2013**, 4, 1543	17.4	978
240	Sputter-cleaned Epitaxial VxMo(1-x)Ny/MgO(001) Thin Films Analyzed by X-ray Photoelectron Spectroscopy: 1. Single-crystal V0.48Mo0.52N0.64. *Surface Science Spectra*, **2013**, 20, 68-73	1.2	10
239	Toughness enhancement in hard ceramic thin films by alloy design. *APL Materials*, **2013**, 1, 042104	5.7	87
238	Epitaxial V0.6W0.4N/MgO(001): Evidence for ordering on the cation sublattice. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2013**, 31, 040602	2.9	14
237	Sputter-cleaned Epitaxial VxMo(1-x)Ny/MgO(001) Thin Films Analyzed by X-ray Photoelectron Spectroscopy: 2. Single-crystal V0.47Mo0.53N0.92. *Surface Science Spectra*, **2013**, 20, 74-79	1.2	9
236	Nanolabyrinthine ZrAlN thin films by self-organization of interwoven single-crystal cubic and hexagonal phases. *APL Materials*, **2013**, 1, 022105	5.7	27
235	Hierarchically textured LixMn2□O4 thin films as positive electrodes for lithium-ion batteries. *Journal of Power Sources*, **2012**, 206, 288-294	8.9	10
234	Role of Tin+ and Aln+ ion irradiation (n=1, 2) during Ti1-xAlxN alloy film growth in a hybrid HIPIMS/magnetron mode. *Surface and Coatings Technology*, **2012**, 206, 4202-4211	4.4	98
233	In situ high-temperature scanning tunneling microscopy study of bilayer graphene growth on 6H-SiC(0001). *Thin Solid Films*, **2012**, 520, 5289-5293	2.2	3
232	Selection of metal ion irradiation for controlling Ti1□AlxN alloy growth via hybrid HIPIMS/magnetron co-sputtering. *Vacuum*, **2012**, 86, 1036-1040	3.7	57

231	Configurational disorder effects on adatom mobilities on Ti1−xAlxN(001) surfaces from first principles. *Physical Review B*, **2012**, 85,	3.3	30
230	The Si3N4/TiN Interface: 4. Si3N4/TiN(001) Grown with a −250 V Substrate Bias and Analyzed In situ using Angle-resolved X-ray Photoelectron Spectroscopy. *Surface Science Spectra*, **2012**, 19, 62-71	1.2	1
229	Nanodiamond-Based Nanolubricants. *Fullerenes Nanotubes and Carbon Nanostructures*, **2012**, 20, 606-610	1.8	17
228	Metal versus rare-gas ion irradiation during Ti1−xAlxN film growth by hybrid high power pulsed magnetron/dc magnetron co-sputtering using synchronized pulsed substrate bias. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2012**, 30, 061504	2.9	79
227	Ion-induced surface relaxation: controlled bending and alignment of nanowire arrays. *Nanotechnology*, **2012**, 23, 175302	3.4	10
226	Microstructure, Oxidation and Tribological Properties of TiAlCN/VCN Coatings Deposited by Reactive HIPIMS. *IOP Conference Series: Materials Science and Engineering*, **2012**, 39, 012011	0.4	1
225	The Si3N4/TiN Interface: 3. Si3N4/TiN(001) Grown with a −150 V Substrate Bias and Analyzed In situ using Angle-resolved X-ray Photoelectron Spectroscopy. *Surface Science Spectra*, **2012**, 19, 52-61	1.2	2
224	The Si3N4/TiN Interface: 1. TiN(001) Grown and Analyzed In situ using Angle-resolved X-ray Photoelectron Spectroscopy. *Surface Science Spectra*, **2012**, 19, 33-41	1.2	3
223	The Si3N4/TiN Interface: 5. TiN/Si3N4 Grown and Analyzed In situ using Angle-resolved X-ray Photoelectron Spectroscopy. *Surface Science Spectra*, **2012**, 19, 72-81	1.2	
222	Role of ethylene on surface oxidation of TiO2(110). *Applied Physics Letters*, **2012**, 101, 211601	3.4	2
221	The Si3N4/TiN Interface: 7. Ti/TiN(001) Grown and Analyzed In situ using X-ray Photoelectron Spectroscopy. *Surface Science Spectra*, **2012**, 19, 92-97	1.2	1
220	The Si3N4/TiN Interface: 6. Si/TiN(001) Grown and Analyzed In situ using Angle-resolved X-ray Photoelectron Spectroscopy. *Surface Science Spectra*, **2012**, 19, 82-91	1.2	
219	Dynamics of Ti, N, and TiNx (x=1−3) admolecule transport on TiN(001) surfaces. *Physical Review B*, **2012**, 86,	3.3	41
218	The Si3N4/TiN Interface: 2. Si3N4/TiN(001) Grown with a −7 V Substrate Bias and Analyzed In situ using Angle-resolved X-ray Photoelectron Spectroscopy. *Surface Science Spectra*, **2012**, 19, 42-51	1.2	1
217	Long-Range and Local Structure in the Layered Oxide Li1.2Co0.4Mn0.4O2. *Chemistry of Materials*, **2011**, 23, 2039-2050	9.6	152
216	Enhanced Ge/Si(001) island areal density and self-organization due to P predeposition. *Journal of Applied Physics*, **2011**, 109, 093526	2.5	2
215	Real-time control of AlN incorporation in epitaxial Hf1−xAlxN using high-flux, low-energy (10−40eV) ion bombardment during reactive magnetron sputter deposition from a Hf0.7Al0.3 alloy target. *Acta Materialia*, **2011**, 59, 421-428	8.4	19
214	Analytical electron microscopy of Li1.2Co0.4Mn0.4O2 for lithium-ion batteries. *Solid State Ionics*, **2011**, 182, 98-107	3.3	61

213	Electronic structure of the SiNx/TiN interface: A model system for superhard nanocomposites. *Physical Review B*, **2011**, 83,	3.3	37
212	Raman scattering from TiNx (0.67 ≤ x ≤ 1.00) single crystals grown on MgO(001). *Journal of Applied Physics*, **2011**, 110, 083503	2.5	36
211	Importance of line and interfacial energies during VLS growth of finely stranded silica nanowires. *Journal of Materials Research*, **2011**, 26, 2247-2253	2.5	5
210	Formation of Si Nanocrystals in Thin SiO2 Films for Memory Device Applications. *Materials Science Forum*, **2010**, 644, 101-104	0.4	6
209	TiAlCN/VCN nanolayer coatings suitable for machining of Al and Ti alloys deposited by combined high power impulse magnetron sputtering/unbalanced magnetron sputtering. *Surface Engineering*, **2010**, 26, 610-614	2.6	22
208	Moiré superstructures of graphene on faceted nickel islands. *ACS Nano*, **2010**, 4, 6509-14	16.7	70
207	Layer-by-layer transfer of multiple, large area sheets of graphene grown in multilayer stacks on a single SiC wafer. *ACS Nano*, **2010**, 4, 5591-8	16.7	60
206	Synergistic Compositions of Colloidal Nanodiamond as Lubricant-additive. *Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics*, **2010**, 28, 869-877	1.3	35
205	The formation and utility of sub-angstrom to nanometer-sized electron probes in the aberration-corrected transmission electron microscope at the University of Illinois. *Microscopy and Microanalysis*, **2010**, 16, 183-93	0.5	28
204	Electrical characterization of MOS structures with self-organized three-layer gate dielectric containing Si nanocrystals. *Journal of Physics: Conference Series*, **2010**, 253, 012034	0.3	
203	Structural Properties of AlN Grown on Sapphire at Plasma Self-Heating Conditions Using Reactive Magnetron Sputter Deposition. *Journal of Electronic Materials*, **2010**, 39, 1146-1151	1.9	17
202	Effect of oxygen to argon ratio on the properties of thin SiO x films deposited by r.f. sputtering. *Journal of Materials Science: Materials in Electronics*, **2010**, 21, 481-485	2.1	5
201	Probing interfacial electronic structures in atomic layer LaMnO(3) and SrTiO(3) superlattices. *Advanced Materials*, **2010**, 22, 1156-60	24	63
200	Microstructural characterization of thin SiOx films obtained by physical vapor deposition. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, **2010**, 174, 132-136	3.1	20
199	Fully strained low-temperature epitaxy of TiN/MgO(001) layers using high-flux, low-energy ion irradiation during reactive magnetron sputter deposition. *Thin Solid Films*, **2010**, 518, 5169-5172	2.2	15
198	Elastic buckling of AlN ribbons on elastomeric substrate. *Applied Physics Letters*, **2009**, 94, 092104	3.4	5
197	Highly Sensitive, Mechanically Stable Nanopore Sensors for DNA Analysis. *Advanced Materials*, **2009** , 21, 2771	24	169
196	LEEM investigations of surfaces using a beam of energetic self-ions. *Microscopy Research and Technique*, **2009**, 72, 197-207	2.8	5

195	Structural study of Li2MnO3 by electron microscopy. *Journal of Materials Science*, **2009**, 44, 5579-5587	4.3	59
194	Transfer of graphene layers grown on SiC wafers to other substrates and their integration into field effect transistors. *Applied Physics Letters*, **2009**, 95, 202101	3.4	64
193	Low-temperature vapour-liquid-solid (VLS) growth of vertically aligned silicon oxide nanowires using concurrent ion bombardment. *Nanotechnology*, **2009**, 20, 115607	3.4	21
192	Growth of semiconducting graphene on palladium. *Nano Letters*, **2009**, 9, 3985-90	11.5	283
191	Detection of single atoms and buried defects in three dimensions by aberration-corrected electron microscope with 0.5-A information limit. *Microscopy and Microanalysis*, **2008**, 14, 469-77	0.5	241
190	Synthesis of linked carbon monolayers: films, balloons, tubes, and pleated sheets. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 7353-8	11.5	50
189	Effect of off stoichiometry on Raman scattering from epitaxial and polycrystalline HfNx (0.85≤1.50) grown on MgO(001). *Journal of Applied Physics*, **2008**, 104, 033507	2.5	17
188	Phosphorus incorporation during Si(001):P gas-source molecular beam epitaxy: Effects on growth kinetics and surface morphology. *Journal of Applied Physics*, **2008**, 103, 123530	2.5	17
187	Real-time imaging of surface evolution driven by variable-energy ion irradiation. *Ultramicroscopy*, **2008**, 108, 646-55	3.1	7
186	Local structure and composition studies of Li1.2Ni0.2Mn0.6O2 by analytical electron microscopy. *Journal of Power Sources*, **2008**, 178, 422-433	8.9	122
185	Characterization studies of pulse magnetron sputtered hard ceramic titanium diboride coatings alloyed with silicon. *Acta Materialia*, **2008**, 56, 4172-4182	8.4	12
184	A Microelectromechanical System for Nano-Scale Testing of One Dimensional Nanostructures. *Sensor Letters*, **2008**, 6, 76-87	0.9	8
183	Growth and physical properties of epitaxial metastable Hf1−xAlxN alloys deposited on MgO(001) by ultrahigh vacuum reactive magnetron sputtering. *Surface and Coatings Technology*, **2007**, 202, 809-814	4.4	20
182	Epitaxial Ti2AlN(0001) thin film deposition by dual-target reactive magnetron sputtering. *Acta Materialia*, **2007**, 55, 4401-4407	8.4	46
181	Measurement and estimation of temperature rise in TEM sample during ion milling. *Ultramicroscopy* , **2007**, 107, 663-8	3.1	33
180	Raman scattering from epitaxial TaNx(0.94≤1.37) layers grown on MgO(001). *Journal of Applied Physics*, **2007**, 101, 123509	2.5	25
179	Combined filtered cathodic arc etching pretreatment□magnetron sputter deposition of highly adherent CrN films. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2007**, 25, 543-550	2.9	18
178	Interface structure in superhard TiN-SiN nanolaminates and nanocomposites: Film growth experiments and ab initio calculations. *Physical Review B*, **2007**, 75,	3.3	125

177	Interface microstructure engineering by high power impulse magnetron sputtering for the enhancement of adhesion. *Journal of Applied Physics*, **2007**, 101, 054301	2.5	227
176	TiN surface dynamics: role of surface and bulk mass transport processes. *AIP Conference Proceedings*, **2007**,	0	3
175	Epitaxial growth of CoSi2 on Si(001) by reactive deposition epitaxy: Island growth and coalescence. *Thin Solid Films*, **2006**, 515, 1340-1348	2.2	9
174	Influence of ion bombardment on structure and tribological performance of nanoscale multilayer C/Cr PVD coatings. *Surface Engineering*, **2006**, 22, 92-98	2.6	7
173	Expansion and melting of Xe nanocrystals in Si. *Physical Review B*, **2006**, 74,	3.3	6
172	Sublimation of atomic layers from a chromium surface. *Physical Review Letters*, **2006**, 96, 126106	7.4	16
171	CoSi2 growth on Si(001) by reactive deposition epitaxy: Effects of high-flux, low-energy ion irradiation. *Journal of Applied Physics*, **2006**, 100, 013510	2.5	4
170	Thermally induced self-hardening of nanocrystalline TiBN thin films. *Journal of Applied Physics*, **2006**, 100, 044301	2.5	44
169	Raman scattering from epitaxial HfN layers grown on MgO(001). *Journal of Applied Physics*, **2006**, 99, 043507	2.5	13
168	Self-hardening of Nanocrystalline Ti-B-N Thin Films. *Microscopy and Microanalysis*, **2006**, 12, 720-721	0.5	3
167	Deposition and Properties of Thin (ZrO2)x(Al2O3)1-x Films on Silicon. *Plasma Processes and Polymers*, **2006**, 3, 179-183	3.4	2
166	Physico-chemical characterization of NF/RO membrane active layers by Rutherford backscattering spectrometry?. *Journal of Membrane Science*, **2006**, 282, 71-81	9.6	102
165	Two-dimensional island dynamics: Role of step energy anisotropy. *Surface Science Reports*, **2006**, 60, 55-77	12.9	40
164	Orientation-dependent mobilities from analyses of two-dimensional TiN(111) island decay kinetics. *Thin Solid Films*, **2006**, 510, 339-345	2.2	3
163	Directed self-assembly of Ge nanostructures on very high index, highly anisotropic Si(hkl) surfaces. *Nano Letters*, **2005**, 5, 369-72	11.5	10
162	Self-organized lamellar structured tantalum nitride by UHV unbalanced-magnetron sputtering. *Thin Solid Films*, **2005**, 475, 45-48	2.2	15
161	Influence of the bias voltage on the structure and the tribological performance of nanoscale multilayer C/Cr PVD coatings. *Thin Solid Films*, **2005**, 475, 219-226	2.2	62
160	Raman spectroscopy study of C/Cr coatings deposited by the combined steered cathodic ARC/unbalanced magnetron sputtering technique. *Surface and Coatings Technology*, **2005**, 200, 1117-1122	4.4	13

159	Phase separation and formation of the self-organised layered nanostructure in C/Cr coatings in conditions of high ion irradiation. *Surface and Coatings Technology*, **2005**, 200, 1572-1579	4.4	39
158	Nucleation kinetics versus nitrogen partial pressure during homoepitaxial growth of stoichiometric TiN(001): A scanning tunneling microscopy study. *Surface Science*, **2005**, 581, L122-127	1.8	35
157	In situ transmission electron microscopy studies enabled by microelectromechanical system technology. *Journal of Materials Research*, **2005**, 20, 1802-1807	2.5	46
156	Self-organized nanocolumnar structure in superhard TiB2 thin films. *Applied Physics Letters*, **2005**, 86, 131909	3.4	148
155	Nucleation and growth kinetics of spiral steps on TiN(111): An in situ low-energy electron microscopy study. *Journal of Applied Physics*, **2005**, 98, 034901	2.5	4
154	Growth of CoSi2 on Si(001) by reactive deposition epitaxy. *Journal of Applied Physics*, **2005**, 97, 044909	2.5	13
153	Epitaxial and polycrystalline HfNx (0.8?x?1.5) layers on MgO(001): Film growth and physical properties. *Journal of Applied Physics*, **2005**, 97, 083521	2.5	86
152	Imaging suspended carbon nanotubes in field-effect transistors configured with microfabricated slits for transmission electron microscopy. *Applied Physics Letters*, **2005**, 87, 173108	3.4	14
151	Elastic constants of single-crystal TiNx(001)(0.67?x?1.0) determined as a function of x by picosecond ultrasonic measurements. *Physical Review B*, **2005**, 71,	3.3	73
150	Growth, surface morphology, and electrical resistivity of fully strained substoichiometric epitaxial TiNx (0.67?x. *Journal of Applied Physics*, **2004**, 95, 356-362	2.5	112
149	Directed nanostructural evolution in Ti0.8Ce0.2N layers grown as a function of low-energy, high-flux ion irradiation. *Applied Physics Letters*, **2004**, 84, 2796-2798	3.4	10
148	Growth and physical properties of epitaxial HfN layers on MgO(001). *Journal of Applied Physics*, **2004**, 96, 878-884	2.5	72
147	Nanomachining carbon nanotubes with ion beams. *Applied Physics Letters*, **2004**, 84, 4484-4486	3.4	79
146	Dislocation-driven surface dynamics on solids. *Nature*, **2004**, 429, 49-52	50.4	34
145	Structure and tribological behaviour of nanoscale multilayer C/Cr coatings deposited by the combined steered cathodic arc/unbalanced magnetron sputtering technique. *Thin Solid Films*, **2004**, 447-448, 7-13	2.2	33
144	Coherent nano-area electron diffraction. *Microscopy Research and Technique*, **2004**, 64, 347-55	2.8	74
143	Determination of absolute orientation-dependent TiN(0 0 1) and TiN(1 1 1) step energies. *Vacuum*, **2004**, 74, 345-351	3.7	6
142	Structure and optical properties of (Al2O3)x(Tio)1 thin films prepared by a sol gel processing. *Vacuum*, **2004**, 76, 215-218	3.7	17

141	Magnetic and electric properties of magnetron-sputtered YBCO/LSMO and LSMO/YBCO double layers. *Vacuum*, **2004**, 76, 261-264	3.7	5
140	Low-energy electron microscopy studies of interlayer mass transport kinetics on TiN(111). *Surface Science*, **2004**, 560, 53-62	1.8	28
139	Dependence of the electromechanical coupling on the degree of orientation of c-textured thin AlN films. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, **2004**, 51, 1347-1353	3.2	45
138	Nucleation kinetics during homoepitaxial growth of TiN(001) by reactive magnetron sputtering. *Physical Review B*, **2004**, 70,	3.3	43
137	Feature-Scale to Wafer-Scale Modeling and Simulation of Physical Vapor Deposition. *The IMA Volumes in Mathematics and Its Applications*, **2004**, 219-236	0.5	
136	Microscopy and Spectroscopy of Lithium Nickel Oxide-Based Particles Used in High Power Lithium-Ion Cells. *Journal of the Electrochemical Society*, **2003**, 150, A1450	3.9	199
135	Nanoparticle beam formation and investigation of gold nanostructured films. *Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena*, **2003**, 21, 2313		5
134	Quantitative structure determination of individual carbon nanotubes using nano-area electron diffraction. *Microscopy and Microanalysis*, **2003**, 9, 322-323	0.5	
133	Pathways of atomistic processes on TiN(001) and (111) surfaces during film growth: an ab initio study. *Journal of Applied Physics*, **2003**, 93, 9086-9094	2.5	292
132	Microstructural evolution during film growth. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2003**, 21, S117-S128	2.9	1301
131	In-situ nanoindentation of epitaxial TiN/MgO (001) in a transmission electron microscope. *Journal of Electronic Materials*, **2003**, 32, 1023-1027	1.9	27
130	Determining absolute orientation-dependent step energies: a general theory for the Wulff-construction and for anisotropic two-dimensional island shape fluctuations. *Surface Science*, **2003**, 522, 75-83	1.8	47
129	In situ high-temperature scanning tunneling microscopy studies of two-dimensional TiN island coarsening kinetics on TiN. *Surface Science*, **2003**, 526, 85-96	1.8	36
128	Coalescence kinetics of two-dimensional TiN islands on atomically smooth TiN(0 0 1) and TiN(1 1 1) terraces. *Surface Science*, **2003**, 540, L611-L616	1.8	16
127	High power pulsed magnetron sputtered CrNx films. *Surface and Coatings Technology*, **2003**, 163-164, 267-272	4.4	228
126	Diagnosis of power fade mechanisms in high-power lithium-ion cells. *Journal of Power Sources*, **2003**, 119-121, 511-516	8.9	98
125	Experimental evidence for a dissociation mechanism in NH3 detection with MIS field-effect devices. *Sensors and Actuators B: Chemical*, **2003**, 89, 1-8	8.5	6
124	Structure determination of individual single-wall carbon nanotubes by nanoarea electron diffraction. *Applied Physics Letters*, **2003**, 82, 2703-2705	3.4	125

123	Structural and mechanical properties of diamond-like carbon films deposited by direct current magnetron sputtering. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2003**, 21, 851-859	2.9	20
122	Vacancy hardening in single-crystal TiNx(001) layers. *Journal of Applied Physics*, **2003**, 93, 6025-6028	2.5	131
121	Growth and physical properties of epitaxial CeN layers on MgO(001). *Journal of Applied Physics*, **2003**, 94, 921-927	2.5	28
120	Absolute orientation-dependent anisotropic TiN(111) island step energies and stiffnesses from shape fluctuation analyses. *Physical Review B*, **2003**, 67,	3.3	33
119	Epitaxial Ti1-xWxN alloys grown on MgO(001) by ultrahigh vacuum reactive magnetron sputtering: Electronic properties and long-range cation ordering. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2003**, 21, 140-146	2.9	51
118	Electromigration in epitaxial Cu(001) lines. *AIP Conference Proceedings*, **2002**,	0	6
117	Progress towards Quantitative Electron Nanodiffraction. *Microscopy and Microanalysis*, **2002**, 8, 658-659	0.5	
116	Surface changes on LiNi0.8Co0.2O2 particles during testing of high-power lithium-ion cells. *Electrochemistry Communications*, **2002**, 4, 620-625	5.1	271
115	Phase composition and microstructure of polycrystalline and epitaxial TaNx layers grown on oxidized Si(001) and MgO(001) by reactive magnetron sputter deposition. *Thin Solid Films*, **2002**, 402, 172-182	2.2	99
114	Optical properties of nanophase films measured by variable-angle spectroscopic ellipsometry. *Thin Solid Films*, **2002**, 408, 211-217	2.2	9
113	Absolute orientation-dependent TiN() step energies from two-dimensional equilibrium island shape and coarsening measurements on epitaxial TiN() layers. *Surface Science*, **2002**, 513, 468-474	1.8	41
112	YBCO/LSMO and LSMO/YBCO double-layer deposition by off-axis magnetron sputtering and strain effects. *Vacuum*, **2002**, 69, 243-247	3.7	7
111	Absolute TiN(111) step energies from analysis of anisotropic island shape fluctuations. *Physical Review Letters*, **2002**, 88, 146101	7.4	33
110	Size-dependent detachment-limited decay kinetics of two-dimensional TiN islands on TiN(111). *Physical Review Letters*, **2002**, 89, 176102	7.4	25
109	Epitaxial growth of metastable □TaN layers on MgO(001) using low-energy, high-flux ion irradiation during ultrahigh vacuum reactive magnetron sputtering. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2002**, 20, 2007	2.9	33
108	Growth of single-crystal CrN on MgO(001): Effects of low-energy ion-irradiation on surface morphological evolution and physical properties. *Journal of Applied Physics*, **2002**, 91, 3589-3597	2.5	111
107	Band gap in epitaxial NaCl-structure CrN(001) layers. *Journal of Applied Physics*, **2002**, 91, 5882-5886	2.5	109
106	Continuum model of thin film deposition incorporating finite atomic length scales. *Journal of Applied Physics*, **2002**, 92, 3487-3494	2.5	6

105	Nanophase films deposited from a high-rate, nanoparticle beam. *Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena*, **2002**, 20, 995		19
104	Development of preferred orientation in polycrystalline NaCl-structure δ-TaN layers grown by reactive magnetron sputtering: Role of low-energy ion surface interactions. *Journal of Applied Physics*, **2002**, 92, 5084-5093	2.5	75
103	Interfacial reaction pathways and kinetics during annealing of epitaxial Al/TiN(001) model diffusion barrier systems. *Thin Solid Films*, **2001**, 391, 69-80	2.2	18
102	TiN(001) and TiN(111) island coarsening kinetics: in-situ scanning tunneling microscopy studies. *Thin Solid Films*, **2001**, 392, 164-168	2.2	46
101	Thermal stability of carbon nitride thin films. *Journal of Materials Research*, **2001**, 16, 3188-3201	2.5	46
100	Evolution of nanoscale texture in ultrathin TiN films. *Applied Physics Letters*, **2001**, 78, 2223-2225	3.4	13
99	Interfacial reactions in epitaxial Al/TiN(111) model diffusion barriers: Formation of an impervious self-limited wurtzite-structure AlN(0001) blocking layer. *Journal of Applied Physics*, **2001**, 89, 7841-7845	2.5	22
98	Optimization of in situ substrate surface treatment in a cathodic arc plasma: A study by TEM and plasma diagnostics. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2001**, 19, 1415-1420	2.9	29
97	Synchrotron x-ray diffraction and transmission electron microscopy studies of interfacial reaction paths and kinetics during annealing of fully-002-textured Al/TiN bilayers. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2001**, 19, 182-191	2.9	16
96	Influence of the interface composition on the corrosion behavior of unbalanced magnetron grown niobium coatings on steel. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2001**, 19, 1392-1398	2.9	18
95	Interfacial reaction pathways and kinetics during annealing of 111-textured Al/TiN bilayers: A synchrotron x-ray diffraction and transmission electron microscopy study. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2001**, 19, 2207-2216	2.9	11
94	Epitaxial Sc1−xTixN(001): Optical and electronic transport properties. *Journal of Applied Physics*, **2001**, 89, 401-409	2.5	78
93	Quantitative C lattice site distributions in epitaxial Ge1−yCy/Ge(001) layers. *Journal of Applied Physics*, **2001**, 90, 3910-3918	2.5	11
92	Multiscale Modeling of Thin-Film Deposition: Applications to Si Device Processing. *MRS Bulletin*, **2001**, 26, 182-189	3.2	69
91	Electronic structure of ScN determined using optical spectroscopy, photoemission, and ab initio calculations. *Physical Review B*, **2001**, 63,	3.3	123
90	Epitaxial NaCl structure δ-TaNx(001): Electronic transport properties, elastic modulus, and hardness versus N/Ta ratio. *Journal of Applied Physics*, **2001**, 90, 2879-2885	2.5	80
89	Electromigration in Epitaxial Copper Lines. *Materials Research Society Symposia Proceedings*, **2000**, 648, 1		3
88	Shortlisted substrate ion etching in combined steered cathodic arc–bm deposition system: effects on interface architecture, adhesion, and tool performance. *Surface Engineering*, **2000**, 16, 176-180	2.6	17

87	Channeling-induced asymmetric distortion of depth profiles from polycrystalline-TiN/Ti/TiN(001) trilayers during secondary ion mass spectrometry. *Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena*, **2000**, 18, 1369		2
86	Epitaxial CrN(001) Grown and Analyzed In situ by XPS and UPS. II. Analysis of Ar+ Sputter Etched Layers. *Surface Science Spectra*, **2000**, 7, 262-270	1.2	5
85	Epitaxial VN(001) Grown and Analyzed In situ by XPS and UPS. I. Analysis of As-deposited Layers. *Surface Science Spectra*, **2000**, 7, 221-232	1.2	9
84	Epitaxial VN(001) Grown and Analyzed In situ by XPS and UPS. II. Analysis of Ar+ Sputter Etched Layers. *Surface Science Spectra*, **2000**, 7, 233-241	1.2	4
83	Epitaxial ScN(001) Grown and Analyzed In situ by XPS and UPS. II. Analysis of Ar+ Sputter Etched Layers. *Surface Science Spectra*, **2000**, 7, 178-184	1.2	7
82	Epitaxial ScN(001) Grown and Analyzed In situ by AES After (1) Deposition and (2) Ar+ Sputter Etching. *Surface Science Spectra*, **2000**, 7, 185-192	1.2	1
81	Epitaxial TiN(001) Grown and Analyzed In situ by AES After (1) Deposition and (2) Ar+ Sputter Etching. *Surface Science Spectra*, **2000**, 7, 213-220	1.2	2
80	Epitaxial metastable Ge1□Cy (y?0.02) alloys grown on Ge(001) from hyperthermal beams: C incorporation and lattice sites. *Journal of Applied Physics*, **2000**, 88, 96-104	2.5	8
79	A Comparison of Auger Electron Spectra from Stoichiometric Epitaxial TiN(001) After (1) UHV Cleaving and (2) Ar+ Sputter Etching. *Surface Science Spectra*, **2000**, 7, 93-100	1.2	6
78	Epitaxial CrN(001) Grown and Analyzed In situ by XPS and UPS. I. Analysis of As-deposited Layers. *Surface Science Spectra*, **2000**, 7, 250-261	1.2	10
77	Epitaxial TiN(001) Grown and Analyzed In situ by XPS and UPS. II. Analysis of Ar+ Sputter Etched Layers. *Surface Science Spectra*, **2000**, 7, 204-212	1.2	18
76	Epitaxial VN(001) Grown and Analyzed In situ by AES After (1) Deposition and (2) Ar+ Sputter Etching. *Surface Science Spectra*, **2000**, 7, 242-249	1.2	1
75	Epitaxial CrN(001) Grown and Analyzed In situ by AES After (1) Deposition and (2) Ar+ Sputter Etching. *Surface Science Spectra*, **2000**, 7, 271-278	1.2	
74	IN-SITU HIGH-TEMPERATURE SCANNING-TUNNELING-MICROSCOPY STUDIES OF TWO-DIMENSIONAL ISLAND-DECAY KINETICS ON ATOMICALLY SMOOTH TiN(001). *Surface Review and Letters*, **2000**, 07, 589-593	1.1	22
73	Effects of high-flux low-energy ion bombardment on the low-temperature growth morphology of TiN(001) epitaxial layers. *Physical Review B*, **2000**, 61, 16137-16143	3.3	38
72	In situ X-ray Photoelectron, Ultraviolet Photoelectron, and Auger Electron Spectroscopy Spectra from First-Row Transition-Metal Nitrides: ScN, TiN, VN, and CrN. *Surface Science Spectra*, **2000**, 7, 167-168	1.2	18
71	Ionized sputter deposition using an extremely high plasma density pulsed magnetron discharge. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2000**, 18, 1533-1537	2.9	212
70	Role of fast sputtered particles during sputter deposition: Growth of epitaxial Ge0.99C0.01/Ge(001). *Physical Review B*, **2000**, 62, 11203-11208	3.3	8

69	Texture of Al thin films deposited by magnetron sputtering onto epitaxial W(001). *Journal of Applied Physics*, **2000**, 87, 168-171	2.5	2
68	Enhanced adhesion through local epitaxy of transition-metal nitride coatings on ferritic steel promoted by metal ion etching in a combined cathodic arc/unbalanced magnetron deposition system. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2000**, 18, 1718-1723	2.9	40
67	Epitaxial ScN(001) Grown and Analyzed In situ by XPS and UPS. I. Analysis of As-deposited Layers. *Surface Science Spectra*, **2000**, 7, 169-177	1.2	4
66	Epitaxial TiN(001) Grown and Analyzed In situ by XPS and UPS. I. Analysis of As-deposited Layers. *Surface Science Spectra*, **2000**, 7, 193-203	1.2	25
65	Dense fully 111-textured TiN diffusion barriers: Enhanced lifetime through microstructure control during layer growth. *Journal of Applied Physics*, **1999**, 86, 3633-3641	2.5	117
64	Growth and physical properties of epitaxial metastable cubic TaN(001). *Applied Physics Letters*, **1999**, 75, 3808-3810	3.4	58
63	A novel pulsed magnetron sputter technique utilizing very high target power densities. *Surface and Coatings Technology*, **1999**, 122, 290-293	4.4	795
62	Hydrogen uptake in alumina thin films synthesized from an aluminum plasma stream in an oxygen ambient. *Applied Physics Letters*, **1999**, 74, 200-202	3.4	70
61	Microstructural evolution and Poisson ratio of epitaxial ScN grown on TiN(001)/MgO(001) by ultrahigh vacuum reactive magnetron sputter deposition. *Journal of Applied Physics*, **1999**, 86, 5524-5529	2.5	63
60	Experimental Methods and Data Analysis for Fluctuation Microscopy. *Materials Research Society Symposia Proceedings*, **1999**, 589, 155		6
59	Ion-Implanted Amorphous Silicon Studied by Variable Coherence TEM. *Materials Research Society Symposia Proceedings*, **1999**, 589, 247		2
58	Analysis of the Atomic Scale Defect Chemistry in Oxygen Deficient Materials by STEM. *Materials Research Society Symposia Proceedings*, **1999**, 589, 69		1
57	Quantitative compositional depth profiling of Si1□□GexCy thin films by simultaneous elastic recoil detection and Rutherford backscattering spectrometry. *Nuclear Instruments & Methods in Physics Research B*, **1998**, 136-138, 654-660	1.2	1
56	Microstructure and electronic properties of the refractory semiconductor ScN grown on MgO(001) by ultra-high-vacuum reactive magnetron sputter deposition. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1998**, 16, 2411-2417	2.9	104
55	Morphology and microstructure of tensile-strained SiGe(001) thin epitaxial films. *Journal of Applied Physics*, **1998**, 83, 1096-1102	2.5	13
54	Growth of poly- and single-crystal ScN on MgO(001): Role of low-energy N2+ irradiation in determining texture, microstructure evolution, and mechanical properties. *Journal of Applied Physics*, **1998**, 84, 6034-6041	2.5	195
53	Improved Ti1□AlxN PVD Coatings for Dry High Speed Cutting Operations. *Surface Engineering*, **1998**, 14, 37-42	2.6	48
52	Morphology of epitaxial TiN(001) grown by magnetron sputtering. *Applied Physics Letters*, **1997**, 70, 1703-1705	3.4	73

51	Al/TixW1 metal/diffusion-barrier bilayers: Interfacial reaction pathways and kinetics during annealing. *Journal of Applied Physics*, **1997**, 82, 2312-2322	2.5	12
50	Aluminide formation in polycrystalline Al/W metal/barrier thin-film bilayers: Reaction paths and kinetics. *Journal of Applied Physics*, **1997**, 82, 201-209	2.5	3
49	Ion energy distributions in reactive arc evaporation discharges used for deposition of TiN films. *Surface and Coatings Technology*, **1997**, 92, 150-156	4.4	11
48	Large-scale fabrication of hard superlattice thin films by combined steered arc evaporation and unbalanced magnetron sputtering. *Surface and Coatings Technology*, **1997**, 93, 69-87	4.4	64
47	Microstructure and oxidation-resistance of Ti1 x y AlxCryYzN layers grown by combined steered-arc/unbalanced-magnetron-sputter deposition. *Surface and Coatings Technology*, **1997**, 94-95, 226-231	4.4	177
46	In situ scanning tunneling microscopy studies of the evolution of surface morphology and microstructure in epitaxial TiN(001) grown by ultra-high-vacuum reactive magnetron sputtering. *Surface and Coatings Technology*, **1997**, 94-95, 403-408	4.4	28
45	Ion-assisted growth of Ti1 AlxN/Ti1 NbyN multilayers by combined cathodic-arc/magnetron-sputter deposition. *Thin Solid Films*, **1997**, 302, 179-192	2.2	109
44	Combined steered arc-unbalanced magnetron grown niobium coatings for decorative and corrosion resistance applications. *Surface and Coatings Technology*, **1996**, 82, 57-64	4.4	25
43	Development of 111 texture in Al films grown on SiO2/Si(001) by ultrahigh-vacuum primary-ion deposition. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1996**, 14, 346-351	2.9	24
42	Morphology and microstructure of epitaxial Cu(001) films grown by primary ion deposition on Si and Ge substrates. *Journal of Applied Physics*, **1996**, 80, 6699-6705	2.5	24
41	Origin of compositional variations in sputter-deposited TixW1 diffusion barrier layers. *Applied Physics Letters*, **1995**, 67, 3102-3104	3.4	32
40	Reaction paths and kinetics of aluminide formation in Al/epitaxial-W(001) model diffusion barrier systems. *Journal of Applied Physics*, **1995**, 78, 194-203	2.5	6
39	Low-energy (5. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1995**, 13, 2836-2842	2.9	15
38	High-flux low-energy (?20 eV) N+2 ion irradiation during TiN deposition by reactive magnetron sputtering: Effects on microstructure and preferred orientation. *Journal of Applied Physics*, **1995**, 78, 5395-5403	2.5	209
37	Development of preferred orientation in polycrystalline TiN layers grown by ultrahigh vacuum reactive magnetron sputtering. *Applied Physics Letters*, **1995**, 67, 2928-2930	3.4	328
36	Mass and energy resolved detection of ions and neutral sputtered species incident at the substrate during reactive magnetron sputtering of Ti in mixed Ar+N2 mixtures. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1994**, 12, 2846-2854	2.9	161
35	Directed sputter deposition of AlCu: Film microstructure and microchemistry. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1994**, 12, 3169-3175	2.9	23
34	Influence of an external axial magnetic field on the plasma characteristics and deposition conditions during direct current planar magnetron sputtering. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1994**, 12, 314-320	2.9	52

33	Influence of the Plasma Kinetics on the Si/C Ratio of a-SixC1-x: H Thin Films Deposited by Reactive Magnetron Sputtering of a Si Target in Ar + CH4 Gas Mixtures. *Contributions To Plasma Physics*, **1994**, 34, 39-49	1.4	
32	Single-phase polycrystalline Ti1−WxN alloys (0?x?0.7) grown by UHV reactive magnetron sputtering: microstructure and physical properties. *Thin Solid Films*, **1994**, 253, 445-450	2.2	24
31	Decomposition of hexafluoroacetylacetonate Cu(I) vinyltrimethylsilane on, and diffusion of Cu into single crystal and polycrystalline titanium nitride. *Surface Science*, **1993**, 295, 219-229	1.8	19
30	Comparison of magnetron sputter deposition conditions in neon, argon, krypton, and xenon discharges. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1993**, 11, 2733-2741	2.9	48
29	Effects of high-flux low-energy (20100 eV) ion irradiation during deposition on the microstructure and preferred orientation of Ti0.5Al0.5N alloys grown by ultra-high-vacuum reactive magnetron sputtering. *Journal of Applied Physics*, **1993**, 73, 8580-8589	2.5	145
28	Average energy deposited per atom: A universal parameter for describing ion-assisted film growth?. *Applied Physics Letters*, **1993**, 63, 36-38	3.4	181
27	Design and characterization of a compact two-target ultrahigh vacuum magnetron sputter deposition system: Application to the growth of epitaxial Ti1−AlxN alloys and TiN/Ti1−AlxN superlattices. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1993**, 11, 136-142	2.9	34
26	Interfacial reactions in epitaxial Al/Ti1−AlxN (0−0.2) model diffusion-barrier structures. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1993**, 11, 11-17	2.9	36
25	Reactive sputtering in the ABSTM system. *Surface and Coatings Technology*, **1993**, 56, 179-182	4.4	26
24	Crystal growth and microstructure of polycrystalline Ti1−AlxN alloy films deposited by ultra-high-vacuum dual-target magnetron sputtering. *Thin Solid Films*, **1993**, 235, 62-70	2.2	175
23	Formation of Defects During Ion-Assisted Growth of Thin Films from the Vapor Phase. *Materials Research Society Symposia Proceedings*, **1992**, 268, 71		4
22	Use of an externally applied axial magnetic field to control ion/neutral flux ratios incident at the substrate during magnetron sputter deposition. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1992**, 10, 3283-3287	2.9	168
21	Synthesis of metastable epitaxial zinc-blende-structure AlN by solid-state reaction. *Applied Physics Letters*, **1992**, 60, 2491-2493	3.4	175
20	Polycrystalline TiN films deposited by reactive bias magnetron sputtering: Effects of ion bombardment on resputtering rates, film composition, and microstructure. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1992**, 10, 265-272	2.9	187
19	Interfacial reactions in single-crystal-TiN (100)/Al/polycrystalline-TiN multilayer thin films. *Thin Solid Films*, **1992**, 215, 152-161	2.2	47
18	Growth and microstructure of epitaxial 45°-rotated bcc W layers on NaCl-structure MgO(001) substrates and TiN(001) buffer layers. *Journal of Crystal Growth*, **1992**, 123, 344-356	1.6	6
17	Transmission electron microscopy studies of microstructural evolution, defect structure, and phase transitions in polycrystalline and epitaxial Ti1−AlxN and TiN films grown by reactive magnetron sputter deposition. *Thin Solid Films*, **1991**, 205, 153-164	2.2	70
16	Low-energy (~100 eV) ion irradiation during growth of TiN deposited by reactive magnetron sputtering: Effects of ion flux on film microstructure. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1991**, 9, 434-438	2.9	152

15	Defect structure and phase transitions in epitaxial metastable cubic Ti0.5Al0.5N alloys grown on MgO(001) by ultra-high-vacuum magnetron sputter deposition. *Journal of Applied Physics*, **1991**, 69, 6437-6450	2.5	133
14	Effects of an unbalanced magnetron in a unique dual-cathode, high rate reactive sputtering system. *Thin Solid Films*, **1990**, 193-194, 117-126	2.2	43
13	COmparison of Some Basic Plasma Parameters and Discharge Characteristics of Planar Magnetron Sputtering Discharges in Argon and Neon. *Contributions To Plasma Physics*, **1990**, 30, 223-231	1.4	20
12	Deposition of carbon films by bias magnetron sputtering in neon and argon. *Thin Solid Films*, **1990**, 185, 247-256	2.2	11
11	Growth of TaC thin films by reactive direct current magnetron sputtering: Composition and structure. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1990**, 8, 3769-3778	2.9	20
10	The dc magnetron sputter deposition process of YBa 2 Cu 3 O x thin films. *Physica C: Superconductivity and Its Applications*, **1989**, 162-164, 599-600	1.3	
9	Effect of ion bombardment during growth on the electrical resistivity of magnetron-sputtered carbon films. *Thin Solid Films*, **1989**, 168, 239-248	2.2	13
8	Microstructure modification of TiN by ion bombardment during reactive sputter deposition. *Thin Solid Films*, **1989**, 169, 299-314	2.2	281
7	Electrostatic Probe Measurements in the Glow Discharge Plasma of a D. C. Magnetron Sputtering System. *Contributions To Plasma Physics*, **1988**, 28, 157-167	1.4	54
6	Influence of the Basic Process Parameters on the Ion/Atom Arrival Rate Ratio during Magnetron Sputter Deposition of Thin Carbon Films. *Contributions To Plasma Physics*, **1988**, 28, 265-273	1.4	9
5	Highly oriented ZnO films obtained by d.c. reactive sputtering of a zinc target. *Thin Solid Films*, **1984** , 120, 55-67	2.2	54
4	Atomic concentrations of binary compound thin films on elemental substrates determined by Rutherford backscattering techniques. *Journal of Applied Physics*, **1983**, 54, 1358-1364	2.5	16
3	Angular distribution and sputtering yield of Al and Al2O3 during 40 key argon ion bombardment. *Vacuum*, **1982**, 32, 747-752	3.7	7
2	Direct current reactive sputtering of aluminium. *Thin Solid Films*, **1978**, 52, 365-371	2.2	16
1	Where Is the Unmatched Transition Metal in Substoichiometric Diboride Line Compounds?		2