# Christophe Coupeau

List of Publications by Year
in descending order



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|---|---|---|---|
| 99 papers | 1,275 citations | 393982 19 h-index | 476904 29 g-index |
| 99 all docs | 99 docs citations | 99 times ranked | 793 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | An atomic-scale insight into Ni3Al slip traces. Materialia, 2020, 9, 100563. | 1.3 | 1 |
| 2 | Low temperature atomic-scale observations of slip traces in niobium. Scripta Materialia, 2020, 183, 81-85. | 2.6 | 10 |
| 3 | Influence of interface steps on the buckle delamination of thin films. Journal of the Mechanics and Physics of Solids, 2019, 132, 103698. | 2.3 | 6 |
| 4 | Kinetics of anticrossing between slip traces and vicinal steps on crystal surfaces. Acta Materialia, 2019, 175, 206-213. | 3.8 | 3 |
| 5 | How slip traces modify the Au(111) reconstruction. Physical Review B, 2019, 99, . | 1.1 | 2 |
| 6 | Atomic-scale insight into non-crystallographic slip traces in body-centred cubic crystals. Scripta Materialia, 2019, 162, 292-295. | 2.6 | 14 |
| 7 | Interacting straight-sided buckles: An enhanced attraction by substrate elasticity. Journal of the Mechanics and Physics of Solids, 2019, 124, 526-535. | 2.3 | 13 |
| 8 | Slip trace-induced terrace erosion. Applied Surface Science, 2019, 466, 454-458. | 3.1 | 0 |
| 9 | Effect of surface on the dissociation of perfect dislocations into Shockley partials describing the herringbone Au(1Â1Â1) surface reconstruction. Philosophical Magazine, 2018, 98, 1594-1607. | 0.7 | 2 |
| 10 | Buckle depression as a signature of Youngâ€™s modulus mismatch between a film and its substrate. Thin Solid Films, 2018, 645, 379-382. | 0.8 | 14 |
| 11 | How soft substrates affect the buckling delamination of thin films through crack front sink-in. Applied Physics Letters, 2017, 110, . | 1.5 | 18 |
| 12 | Influence of terrace widths on Au(111) reconstruction. Physical Review B, 2017, 96, . | 1.1 | 12 |
| 13 | Slip-trace-induced vicinal step destabilization. Physical Review B, 2016, 93, . | 1.1 | 4 |
| 14 | Effect of plasticity and atmospheric pressure on the formation of donut- and croissantlike buckles. Physical Review E, 2015, 91, 012410. | 0.8 | 16 |
| 15 | Modeling of Young×3s modulus variations with temperature of Ni and oxidized Ni using a magneto-mechanical approach. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2015, 633, 76-91. | 2.6 | 23 |
| 16 | Atomic reconstruction of niobium (111) surfaces. Surface Science, 2015, 632, 60-63. | 0.8 | 6 |
| 17 | Redeposition of a straight-sided buckle under pressure. Physical Review E, 2014, 89, 032410. | 0.8 | 5 |
| 18 | What can be learnt on the yield stress anomaly of Ni3Al using AFM observations. Intermetallics, 2014, 50, 86-93. | 1.8 | 9 |

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|---|---|---|---|
| 19 | An experimental UHV AFM-STM device for characterizing surface nanostructures under stress/strain at variable temperature. Review of Scientific Instruments, 2013, 84, 105117. | 0.6 | 14 |
| 20 | Buckling-induced dislocation emission in thin films on substrates. International Journal of Solids and Structures, 2013, 50, 3717-3722. | 1.3 | 7 |
| 21 | Interface step-induced thin-film delamination and buckling. Acta Materialia, 2013, 61, 4429-4438. | 3.8 | 11 |
| 22 | Effect of oxidation on the elastic properties of ferromagnetic metals. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 571, 92-94. | 2.6 | 5 |
| 23 | Bowâ€“tie slip traces in Fe80Al20 single crystals deformed at room temperature. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 565, 258-261. | 2.6 | 4 |
| 24 | Kinetic evolution of blistering in hydrogen-implanted silicon. Applied Physics Letters, 2013, 103, . | 1.5 | 13 |
| 25 | Quantitative numerical method for analysing slip traces observed by AFM. Surface Topography: Metrology and Properties, 2013, 1, 015002. | 0.9 | 3 |
| 26 | Validation by asymptotic development of the empirical bulge test formula. Surface and Coatings Technology, 2012, 207, 218-220. | 2.2 | 1 |
| 27 | Gliding at interface during thin film buckling: A coupled atomistic/elastic approach. Acta Materialia, 2012, 60, 1259-1267. | 3.8 | 15 |
| 28 | Atypical â€œboomerangâ€•slip traces in [001] niobium single crystals deformed at room temperature. Scripta Materialia, 2012, 66, 475-478. | 2.6 | 10 |
| 29 | Effects of sliding on interface delamination during thin film buckling. Scripta Materialia, 2012, 67, 157-160. | 2.6 | 15 |
| 30 | About the internal pressure in cavities derived from implantation-induced blistering in semi-conductors. Journal of Applied Physics, 2011, 110, . | 1.1 | 9 |
| 31 | A new peeling mechanism of blisters involving surface diffusion. Scripta Materialia, 2011, 65, 672-674. | 2.6 | 1 |
| 32 | Understanding substrate plasticity and buckling of thin films. , 2011, , 317-339. | | 0 |
| 33 | Evidence of vacuum between buckled films and their substrates. Thin Solid Films, 2010, 518, 5233-5236. | 0.8 | 12 |
| 34 | Buckling of Stressed and Pressurized Thin Films on Substrates. Journal of Applied Mechanics, Transactions ASME, 2010, 77, . | 1.1 | 9 |
| 35 | A stress relaxation mechanism through buckling-induced dislocations in thin films. Journal of Applied Physics, 2010, 108, 026104. | 1.1 | 4 |
| 36 | Effect of pressure and stress on blistering induced by hydrogen implantation in silicon. Europhysics Letters, 2010, 92, 16001. | 0.7 | 14 |

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| 37 | Buckling patterns of gold thin films on silicon substrates: Formation of superimposed blisters. Europhysics Letters, 2009, 86, 54002. | 0.7 | 7 |
| 38 | Investigating the secondary buckling of thin films with a model based on elastic rods with hinges. Journal of Mechanics of Materials and Structures, 2009, 4, 121-138. | 0.4 | 3 |
| 39 | From thin film and coating buckling structures to mechanical properties. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 483-484, 617-619. | 2.6 | 21 |
| 40 | Quantitative atomic force microscopy analysis of slip traces in Ni3Al yield stress anomaly. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 483-484, 87-90. | 2.6 | 15 |
| 41 | Molecular dynamics simulations of buckling-induced plasticity. Applied Physics Letters, 2008, 93, . | 1.5 | 16 |
| 42 | Buckling and cracking of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mtext>Y</mml:mtext><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mtext> films at grain boundaries. Physical Review B, 2008, 78, . | 1.1 | 10 |
| 43 | How do nanometer scale dislocation traces evolve in the stress anomaly domain of intermetallics?. Applied Physics Letters, 2007, 90, 171914. | 1.5 | 7 |
| 44 | Plastic Folding of Buckling Structures. Physical Review Letters, 2007, 99, 046101. | 2.9 | 45 |
| 45 | Short range order heterogeneity on plastic mechanisms in Î³-phase nickel-based superalloys. Philosophical Magazine, 2007, 87, 3893-3904. | 0.7 | 4 |
| 46 | Post-flambage unilatÃ©ral des films minces sur substrat. European Journal of Computational Mechanics, 2007, 16, 941-955. | 0.6 | 0 |
| 47 | Effect of the dislocation emergence on the mechanical behavior of coated materials: Elastic energy relaxation or adhesion modification. Surface and Coatings Technology, 2007, 202, 1094-1097. | 2.2 | 3 |
| 48 | Thin film delamination study duringin situcompressive testing by scanning micro X-ray diffraction. Acta Crystallographica Section A: Foundations and Advances, 2007, 63, s235-s235. | 0.3 | 0 |
| 49 | Nanoindentation-induced deformation in Alâ€“Pdâ€“Mn single quasicrystals. Applied Physics Letters, 2006, 88, 073103. | 1.5 | 6 |
| 50 | How Does Crystalline Substrate Plasticity Modify Thin Film Buckling?. Physical Review Letters, 2006, 97, 096101. | 2.9 | 29 |
| 51 | Stability diagram of unilateral buckling patterns of strip-delaminated films. Physical Review E, 2006, 74, 066601. | 0.8 | 58 |
| 52 | Mechanical behaviour of metallic thin films on polymeric substrates and the effect of ion beam assistance on crack propagation. Acta Materialia, 2005, 53, 411-417. | 3.8 | 32 |
| 53 | Effect of substrate compliance on the global unilateral post-buckling of coatings: AFM observations and finite element calculations. Acta Materialia, 2005, 53, 441-447. | 3.8 | 75 |
| 54 | Stress heterogeneity of thermally grown polycrystalline nickel oxide layers. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2005, 395, 22-26. | 2.6 | 5 |

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| 55 | Snapthrough occurring in the postbuckling of thin films. Applied Physics Letters, 2005, 86, 081905. | 1.5 | 13 |
| 56 | Strain mapping on gold thin film buckling and silicon blistering. Materials Research Society Symposia Proceedings, 2005, 875, 1. | 0.1 | 2 |
| 57 | Activation of dislocation sources in Î³-phases of nickel-base superalloys studied by use of atomic-force microscopy and transmission electron microscopy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2004, 387-389, 103-108. | 2.6 | 10 |
| 58 | Experimental study of Ni3Al slip traces by atomic force microscopy: an evidence of mobile dislocation exhaustion. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2004, 387-389, 926-930. | 2.6 | 8 |
| 59 | Evidence of plastic damage in thin films around buckling structures. Thin Solid Films, 2004, 469-470, 221-226. | 0.8 | 18 |
| 60 | Buckling and post-buckling of stressed straight-sided wrinkles: experimental AFM observations of bubbles formation and finite element simulations. Acta Materialia, 2004, 52, 3959-3966. | 3.8 | 45 |
| 61 | Ion irradiation effects on the mechanical stability of compressed metallic thin films. Applied Physics Letters, 2004, 84, 894-896. | 1.5 | 10 |
| 62 | Indentation-induced twinning in LaAlO3 single crystals: An atomic force microscopy study. Scripta Materialia, 2003, 49, 903-908. | 2.6 | 22 |
| 63 | Damage mode tensile testing of thin gold films on polyimide substrates by X-ray diffraction and atomic force microscopy. Thin Solid Films, 2003, 424, 267-273. | 0.8 | 41 |
| 64 | Atomic force microscopy observations of successive damaging mechanisms of thin films on substrates under tensile stress. Thin Solid Films, 2003, 429, 267-272. | 0.8 | 22 |
| 65 | Buckling pattern with rings: Evidence of plastic damage in thin films. Philosophical Magazine Letters, 2003, 83, 453-457. | 0.5 | 3 |
| 66 | Buckling phenomena in Y2O3 thin films on GaAs substrates. Applied Physics Letters, 2003, 82, 2056-2058. | 1.5 | 9 |
| 67 | Damaging of a soft substrate by cracks propagation through its hard coating: AFM observations and finite element simulation. EPJ Applied Physics, 2003, 22, 15-19. | 0.3 | 3 |
| 68 | Comportement mÃ©canique des matÃ©riaux revÃªtus sous contrainteÂ: phÃ©nomÃ¨nes de dÃ©cohÃ©sion interfaciale, cloquage et fissuration. European Physical Journal Special Topics, 2003, 106, 121-130. | 0.2 | 0 |
| 69 | Atomic force microscopy investigation of buckling patterns of nickel thin films on polycarbonate substrates. Philosophical Magazine Letters, 2002, 82, 477-482. | 0.5 | 7 |
| 70 | Damaging of a Soft Polymeric Substrate by Crack Propagation Through Its Hard Coating. Materials Research Society Symposia Proceedings, 2002, 734, 271. | 0.1 | 0 |
| 71 | Buckling of Thin Films on Substrates: From Straight-Sided Wrinkles to Both Worm-Like and Varicose Structures. Materials Research Society Symposia Proceedings, 2002, 749, 1. | 0.1 | 0 |
| 72 | Stability of wrinkling patterns: from straight-sided to worm-like structures. EPJ Applied Physics, 2002, 17, 173-178. | 0.3 | 6 |

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| 73 | Atomic force microscopy study of the morphological shape of thin film buckling. Thin Solid Films, 2002, 406, 190-194. | 0.8 | 45 |
| 74 | Characterization of thin film elastic properties using X-ray diffraction and mechanical methods: application to polycrystalline stainless steel. Thin Solid Films, 2001, 398-399, 496-500. | 0.8 | 31 |
| 75 | Atomic force microscopy observations of in situ deformed materials: application to single crystals and thin films on substrates. Journal of Microscopy, 2001, 203, 99-107. | 0.8 | 9 |
| 76 | Experimental investigation of the instability of buckling patterns: from straight-sided to wormlike structures. Scripta Materialia, 2001, 44, 2623-2627. | 2.6 | 39 |
| 77 | Interactive study of straight-sided buckling patterns in thin films under compressive stress. EPJ Applied Physics, 2000, 10, 3-7. | 0.3 | 16 |
| 78 | Atomic force microscopy of dislocation locking effects at gold film LiF substrate interface. Scripta Materialia, 2000, 43, 187-192. | 2.6 | 6 |
| 79 | On the Young's modulus of 304 L stainless steel thin films. Materials Characterization, 2000, 45, 33-37. | 1.9 | 12 |
| 80 | Role of dislocation structure on nanomechanical properties. Journal of Materials Science Letters, 2000, 19, 259-262. | 0.5 | 3 |
| 81 | Atomic force microscopy analysis of buckling phenomena in metallic thin films on substrates. Journal of Materials Science Letters, 2000, 19, 353-355. | 0.5 | 11 |
| 82 | Worm-like delamination patterns of thin stainless steel films on polycarbonate substrates. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 2000, 80, 2559-2565. | 0.8 | 33 |
| 83 | Mechanical behaviour of thin films on substrates : Debonding and buckling. European Physical Journal Special Topics, 2000, 10, Pr6-47-Pr6-52. | 0.2 | 0 |
| 84 | Pop-in phenomenon during nanoindentation in MgO. EPJ Applied Physics, 1999, 8, 123-128. | 0.3 | 27 |
| 85 | Nano-undulations of nickel thin films on a substrate under compressive stress. Philosophical Magazine Letters, 1999, 79, 497-501. | 0.5 | 2 |
| 86 | Atomic force microscopy of in situ deformed nickel thin films. Thin Solid Films, 1999, 353, 194-200. | 0.8 | 50 |
| 87 | Quantitative analysis of surface effects of plastic deformation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1999, 271, 242-250. | 2.6 | 16 |
| 88 | Slip line analysis in Ni3Al by atomic force microscopy. Scripta Materialia, 1999, 41, 945-950. | 2.6 | 14 |
| 89 | Atomic force microscopy observations of debonding in 304 L stainless steel thin films. Materials Letters, 1999, 41, 181-185. | 1.3 | 7 |
| 90 | On the relation between Frank-Read source nature and fine slip line structure. EPJ Applied Physics, 1999, 5, 231-236. | 0.3 | 4 |

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| 91 | Atomic force microscopy of twin formation in low-stacking fault CuAl alloy. EPJ Applied Physics, 1999, 6, 1-6. | 0.3 | 15 |
| 92 | Plasticity study of deformed materials by in situ atomic force microscopy. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 1998, 16, 1964. | 1.6 | 36 |
| 93 | In Situ Plastic Deformation Study by AFM: Application to Ni Based Alloy Mc2 Phase Î³. Materials Research Society Symposia Proceedings, 1998, 522, 107. | 0.1 | 0 |
| 94 | Statistical analysis ofin-situslip lines by atomic force microscopy observations. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1997, 76, 1139-1152. | 0.8 | 10 |
| 95 | Nanometer undulations on CaF2 cleaved surfaces observed by Atomic Force Microscopy. Scripta Materialia, 1996, 34, 1673-1678. | 2.6 | 4 |
| 96 | Atomic force microscopy of in situ deformed LiF. Scripta Metallurgica Et Materialia, 1995, 32, 1573-1578. | 1.0 | 23 |
| 97 | A New Insight in the Plasticity of Ni<sub>3</sub>Al Intermetallic Compounds Using AFM Observations. Key Engineering Materials, 0, 465, 403-406. | 0.4 | 1 |
| 98 | Contribution of AFM Observations to the Understanding of Ni<sub>3</sub>Al Yield Stress Anomaly. Applied Mechanics and Materials, 0, 61, 71-77. | 0.2 | 0 |
| 99 | Delamination of metal thin films on polymer substrates: From straight-sided blisters to varicose structures. , 0, . | | 1 |