

# Nancy R Forde

## List of Publications by Year in descending order

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Version: 2024-02-01

74  
papers

2,037  
citations

361045

20  
h-index

243296

44  
g-index

82  
all docs

82  
docs citations

82  
times ranked

2382  
citing authors

| #  | ARTICLE  | IF  | CITATIONS |
|----|--|-----|-----------|
| 1  | Mechanical Processes in Biochemistry. Annual Review of Biochemistry, 2004, 73, 705-748.  | 5.0 | 721       |
| 2  | Using mechanical force to probe the mechanism of pausing and arrest during continuous elongation by Escherichia coli RNA polymerase. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 11682-11687. | 3.3 | 138       |
| 3  | Microrheological Characterization of Collagen Systems: From Molecular Solutions to Fibrillar Gels. PLoS ONE, 2013, 8, e70590.  | 1.1 | 92        |
| 4  | Squaring the Circle in Peptide Assembly: From Fibers to Discrete Nanostructures by <i>de Novo</i> Design. Journal of the American Chemical Society, 2012, 134, 15457-15467.  | 6.6 | 87        |
| 5  | Calibration of dynamic holographic optical tweezers for force measurements on biomaterials. Optics Express, 2008, 16, 20987.   | 1.7 | 75        |
| 6  | Thermal Probing of E. coli RNA Polymerase Off-Pathway Mechanisms. Journal of Molecular Biology, 2008, 382, 628-637.  | 2.0 | 66        |
| 7  | Mechanics and structural stability of the collagen triple helix. Current Opinion in Chemical Biology, 2019, 53, 98-105.  | 2.8 | 59        |
| 8  | Power spectral analysis for optical trap stiffness calibration from high-speed camera position detection with limited bandwidth. Optics Express, 2010, 18, 7670.   | 1.7 | 58        |
| 9  | Electronic accessibility of dissociation channels in an amide: N,N-dimethylformamide photodissociation at 193 nm. Journal of Chemical Physics, 1999, 110, 8954-8968.   | 1.2 | 44        |
| 10 | Brownian motion in a modulated optical trap. Journal of Optics, 2007, 9, S256-S263.  | 1.5 | 38        |
| 11 | Environmentally Controlled Curvature of Single Collagen Proteins. Biophysical Journal, 2018, 115, 1457-1469.   | 0.2 | 37        |
| 12 | The influence of local electronic character and nonadiabaticity in the photodissociation of nitric acid at 193 nm. Journal of Chemical Physics, 1997, 107, 5361-5373.  | 1.2 | 36        |
| 13 | The Tumbleweed: Towards a synthetic protein motor. HFSP Journal, 2009, 3, 204-212.   | 2.5 | 35        |
| 14 | Stretching single DNA molecules to demonstrate high-force capabilities of holographic optical tweezers. Journal of Biophotonics, 2010, 3, 224-233.   | 1.1 | 35        |
| 15 | Intact Telopeptides Enhance Interactions between Collagens. Biophysical Journal, 2016, 111, 2404-2416.   | 0.2 | 34        |
| 16 | Chemical reaction dynamics when the Born-Oppenheimer approximation fails Understanding which changes in the electronic wavefunction might be restricted. Faraday Discussions, 1997, 108, 221-242.  | 1.6 | 30        |
| 17 | Biased motion and molecular motor properties of bipedal spiders. Physical Review E, 2010, 81, 021106.  | 0.8 | 30        |
| 18 | Time-dependent motor properties of multipedal molecular spiders. Physical Review E, 2011, 84, 031111.  | 0.8 | 29        |

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|----|--|-----|-----------|
| 19 | Single-Molecule Assay for Proteolytic Susceptibility: Force-Induced Collagen Destabilization. <i>Biophysical Journal</i> , 2018, 114, 570-576.   | 0.2 | 28        |
| 20 | Photodissociation of Acrylic Acid at 193 nm. <i>Journal of Physical Chemistry A</i> , 1997, 101, 6603-6610.  | 1.1 | 26        |
| 21 | Development and characterization of a eukaryotic expression system for human type II procollagen. <i>BMC Biotechnology</i> , 2015, 15, 112.  | 1.7 | 21        |
| 22 | Substrate stiffness tunes the dynamics of polyvalent rolling motors. <i>Soft Matter</i> , 2021, 17, 1468-1479.   | 1.2 | 20        |
| 23 | Dimensionality-dependent crossover in motility of polyvalent burnt-bridges ratchets. <i>Physical Review E</i> , 2018, 98, .  | 0.8 | 19        |
| 24 | Photodissociating trimethylamine at 193 nm to probe dynamics at a conical intersection and to calibrate detection efficiency of radical products. <i>Journal of Chemical Physics</i> , 1999, 111, 4558-4568. | 1.2 | 17        |
| 25 | Positional stability of holographic optical traps. <i>Optics Express</i> , 2011, 19, 21370.  | 1.7 | 16        |
| 26 | Construction and Characterization of Kilobasepair Densely Labeled Peptide-DNA. <i>Biomacromolecules</i> , 2014, 15, 4065-4072.   | 2.6 | 16        |
| 27 | Optical Tweezers Approaches for Probing Multiscale Protein Mechanics and Assembly. <i>Frontiers in Molecular Biosciences</i> , 2020, 7, 577314.  | 1.6 | 15        |
| 28 | Modified Pluronic F127 Surface for Bioconjugation and Blocking Nonspecific Adsorption of Microspheres and Biomacromolecules. <i>Langmuir</i> , 2018, 34, 13550-13557.  | 1.6 | 14        |
| 29 | Design and Construction of the Lawnmower, An Artificial Burnt-Bridges Motor. <i>IEEE Transactions on Nanobioscience</i> , 2015, 14, 305-312.   | 2.2 | 13        |
| 30 | Fluidic switching in nanochannels for the control of Inchworm: a synthetic biomolecular motor with a power stroke. <i>Nanoscale</i> , 2014, 6, 15008-15019.  | 2.8 | 12        |
| 31 | Synthetic biology approaches to dissecting linear motor protein function: towards the design and synthesis of artificial autonomous protein walkers. <i>Biophysical Reviews</i> , 2020, 12, 1041-1054.       | 1.5 | 12        |
| 32 | Characterization of nitrogen-containing radical products from the photodissociation of trimethylamine using photoionization detection. <i>Journal of Chemical Physics</i> , 2000, 113, 3088-3097.            | 1.2 | 11        |
| 33 | Construction of a Chassis for a Tripartite Protein-Based Molecular Motor. <i>ACS Synthetic Biology</i> , 2017, 6, 1096-1102.   | 1.9 | 11        |
| 34 | A chloride ring is an ancient evolutionary innovation mediating the assembly of the collagen IV scaffold of basement membranes. <i>Journal of Biological Chemistry</i> , 2019, 294, 7968-7981.               | 1.6 | 11        |
| 35 | Using optical tweezers to study mechanical properties of collagen. , 2011, , .   |     | 10        |
| 36 | Controlled microfluidic switching in arbitrary time-sequences with low drag. <i>Lab on A Chip</i> , 2013, 13, 2389.  | 3.1 | 10        |

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|----|--|-----|-----------|
| 37 | Probing multiscale mechanics of collagen with optical tweezers. Proceedings of SPIE, 2013, , .   | 0.8 | 10        |
| 38 | Apparent superballistic dynamics in one-dimensional random walks with biased detachment. Physical Review Research, 2020, 2, .  | 1.3 | 10        |
| 39 | Tuning the performance of an artificial protein motor. Physical Review E, 2011, 84, 031922.  | 0.8 | 9         |
| 40 | Motor properties from persistence: a linear molecular walker lacking spatial and temporal asymmetry. New Journal of Physics, 2015, 17, 055017.                                     | 1.2 | 8         |
| 41 | Sequence-dependent mechanics of collagen reflect its structural and functional organization. Biophysical Journal, 2021, 120, 4013-4028.  | 0.2 | 8         |
| 42 | Line optical tweezers as controllable micromachines: techniques and emerging trends. Soft Matter, 2022, 18, 5359-5365.   | 1.2 | 8         |
| 43 | Design and Construction of a One-Dimensional DNA Track for an Artificial Molecular Motor. Journal of Nanomaterials, 2012, 2012, 1-10.  | 1.5 | 7         |
| 44 | Multivalent Diffusive Transport. Journal of Physical Chemistry B, 2021, 125, 6857-6863.  | 1.2 | 7         |
| 45 | Through the Eyes of Creators: Observing Artificial Molecular Motors. ACS Nanoscience Au, 2022, 2, 140-159.   | 2.0 | 7         |
| 46 | Effects of finite and discrete sampling and blur on microrheology experiments. Optics Express, 2017, 25, 31239.  | 1.7 | 6         |
| 47 | AutoSmarTrace: Automated chain tracing and flexibility analysis of biological filaments. Biophysical Journal, 2021, 120, 2599-2608.  | 0.2 | 5         |
| 48 | Comment on "Direct Measurement of the Oscillation Frequency in an Optical-Tweezers Trap by Parametric Excitation". Physical Review Letters, 2007, 98, 189802; author reply 189803. | 2.9 | 4         |
| 49 | The bar-hinge motor: a synthetic protein design exploiting conformational switching to achieve directional motility. New Journal of Physics, 2019, 21, 013002.                     | 1.2 | 4         |
| 50 | Probing the Viscoelasticity of Collagen Solutions via Optical-Tweezers-Based Microrheology. Materials Research Society Symposia Proceedings, 2012, 1465, 20.                       | 0.1 | 3         |
| 51 | Probing the Elasticity of Short Proteins with Optical Tweezers. , 2009, , .  |     | 3         |
| 52 | Nano-Mechanical Studies of Collagen: The Influence of Ionic Strength, pH and Collagen Sources on Molecular Flexibility. Biophysical Journal, 2017, 112, 488a.                      | 0.2 | 2         |
| 53 | Position and Intensity Modulations in Holographic Optical Traps Created by a Liquid Crystal Spatial Light Modulator. , 2009, , .   |     | 2         |
| 54 | Calibration of Holographic Optical Tweezers for Force Measurements on Biomaterials. Biophysical Journal, 2009, 96, 386a.   | 0.2 | 1         |

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|----|--|-----|-----------|
| 55 | Probing the Viscoelasticity of Collagen Solutions with Optical-Tweezers-Based Microrheology. Biophysical Journal, 2011, 100, 483a-484a.  | 0.2 | 1         |
| 56 | Using DNA Handles in Optical Tweezers Studies of Protein Mechanics. Biophysical Journal, 2012, 102, 578a.  | 0.2 | 1         |
| 57 | Investigating the Mechanism of Collagen Self-Assembly with Microrheology. Biophysical Journal, 2014, 106, 55a.   | 0.2 | 1         |
| 58 | Synthetic, Protein-Based Molecular Motors. Biophysical Journal, 2009, 96, 300a.  | 0.2 | 0         |
| 59 | Simulations of a Molecular Motor: Influence of Leg Number and Substrate Dimensionality on the "Molecular Spider". Biophysical Journal, 2009, 96, 301a.   | 0.2 | 0         |
| 60 | Stretching Single DNA Molecules and using High-Speed Camera Power Spectral Analysis to Demonstrate High Force Capabilities of Holographic Optical Tweezers. Biophysical Journal, 2010, 98, 624a. | 0.2 | 0         |
| 61 | Probing the Mechanical Properties of Single Scleroproteins with Optical Tweezers. Biophysical Journal, 2010, 98, 593a.   | 0.2 | 0         |
| 62 | Biased Motion and Molecular Motor Properties of Molecular Spiders. Biophysical Journal, 2010, 98, 572a.  | 0.2 | 0         |
| 63 | Motor Properties of Molecular Spiders. Biophysical Journal, 2011, 100, 304a-305a.  | 0.2 | 0         |
| 64 | Conceptual Models for Synthetic Bipedal Motors. Biophysical Journal, 2011, 100, 441a.  | 0.2 | 0         |
| 65 | Microfluidic Device for Controlled Fluid Switching to be used with Chemically Powered Molecular Motors on Surface Bound Tracks. Biophysical Journal, 2012, 102, 717a.                            | 0.2 | 0         |
| 66 | The Inchworm: Construction of a Biomolecular Motor with a Power Stroke. Biophysical Journal, 2012, 102, 206a.  | 0.2 | 0         |
| 67 | The Lawnmower: An Autonomous Synthetic Protein Motor. Biophysical Journal, 2013, 104, 545a.  | 0.2 | 0         |
| 68 | Investigating Mechanical Properties of Short Polymers with Optical Tweezers. Biophysical Journal, 2014, 106, 390a.   | 0.2 | 0         |
| 69 | Introducing a Kinesin-Inspired Nanomotor Concept. Biophysical Journal, 2014, 106, 782a.  | 0.2 | 0         |
| 70 | Light Driven Conformational Switching: An Approach to Creating Designed Protein Motion. Biophysical Journal, 2014, 106, 244a-245a.   | 0.2 | 0         |
| 71 | Investigating Force-Induced Structural Changes in Single Collagen Molecules. Biophysical Journal, 2015, 108, 171a.   | 0.2 | 0         |
| 72 | Genetically modified human type II collagen for N- and C-terminal covalent tagging. Canadian Journal of Chemistry, 2018, 96, 204-211.  | 0.6 | 0         |

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|----|---|-----|-----------|
| 73 | Single-Molecule Assay for Proteolytic Susceptibility: Force-Induced Destabilization of Collagen's Triple Helix. <i>Biophysical Journal</i> , 2018, 114, 578a. | 0.2 | 0         |
| 74 | Probing Telopeptide-Induced Collagen-Collagen Interactions Using Optical-Tweezers-Based Microrheology. , 2015, , .  |     | 0         |