

Publication List

(Markus A. Hartmann)

Peer Reviewed Publications

45. Alexandra Tits, Stéphane Blouin, Maximilian Rummeler, Jean-François Kaux, Pierre Drion, G. Harry van Lenthe, Richard Weinkamer, Markus A. Hartmann and Davide Ruffoni
Structural and functional heterogeneity of mineralized fibrocartilage at the Achilles tendon-bone insertion
Acta Biomaterialia **accepted**
44. Saila Laakso, Tong Xiaoyu, Stéphane Blouin, Petra Keplinger, Ville-Valtteri Välimäki, Heikki Kröger, Outi Mäkitie and Markus A. Hartmann
Bone tissue evaluation indicates abnormal mineralization in patients with autoimmune polyendocrine syndrome type—report on 3 cases
Calcified Tissue International **accepted**
DOI: [10.1007/s00223-023-01077-0](https://doi.org/10.1007/s00223-023-01077-0)
43. Roland Kocijan, Gabriel Mindler, Markus A. Hartmann, Daniel A. Kraus, Adalbert Raimann and Jochen Zwerina
Dissociation of clinical, laboratory and bone biopsy findings in adult X-linked Hypophosphatemia: a case report
Wiener Medizinische Wochenschrift **accepted**
DOI: [10.1007/s10354-022-01000-6](https://doi.org/10.1007/s10354-022-01000-6)
42. Stéphane Blouin, Barbara M. Misof, Matthias Mähr, Nadja Fratzl-Zelman, Paul Roschger, Sonja Lueger, Phaedra Messmer, Petra Keplinger, Frank Rauch, Francis H. Glorieux, Andrea Berzlanovich, Gerlinde M. Gruber, Peter C. Brugger, Elizabeth Shane, Robert R. Recker, Jochen Zwerina and Markus A. Hartmann
Osteocyte lacunae in transiliac bone biopsy samples across life span
Acta Biomaterialia **157**, 275 (2023)
DOI: [10.1016/j.actbio.2022.11.051](https://doi.org/10.1016/j.actbio.2022.11.051)
41. Tengtang Tang, William Landis, Stéphane Blouin, Luca Bertinetti, Markus A. Hartmann, Andrea Berzlanovich, Richard Weinkamer, Wolfgang Wagermaier and Peter Fratzl
Sub-canalicular nanochannel volume is inversely correlated with calcium content in human cortical bone
Journal of Bone and Mineral Research **38**, 313 (2023)
DOI: [10.1002/jbmr.4753](https://doi.org/10.1002/jbmr.4753)

40. Barbara M. Misof, Paul Roschger, Matthias Mähr, Nadja Fratzl-Zelman, Francis H. Glorieux, Markus A. Hartmann, Frank Rauch and Stéphane Blouin
Accelerated mineralization kinetics in children with osteogenesis imperfecta type 1
Bone **166**, 116580 (2023)
DOI: [10.1016/j.bone.2022.116580](https://doi.org/10.1016/j.bone.2022.116580)
39. Alice Costantini, Riikka E. Mäkitie, Markus A. Hartmann, Nadja Fratzl-Zelman, M. Carola Zillikens, Uwe Kornak, Ken Søre and Outi Mäkitie
Early-onset osteoporosis: Rare monogenic forms elucidate the complexity of disease pathogenesis beyond type I collagen
Journal of Bone and Mineral Research **37**, 1623 (2022)
DOI: [10.1002/jbmr.4668](https://doi.org/10.1002/jbmr.4668)
38. Nadja Fratzl-Zelman, Markus A. Hartmann, Sonja Gamsjaeger, Stamatia Rokidi, Eleftherios P. Paschalis, Stéphane Blouin, and Jochen Zwerina
Bone matrix mineralization and response to burosumab in adult patients with X-linked hypophosphatemia: Results from the phase 3, single-arm international trial
Journal of Bone and Mineral Research **37**, 1665 (2022)
DOI: [10.1002/jbmr.4641](https://doi.org/10.1002/jbmr.4641)
37. Ghazal Hedjazi, Gali Guterman-Ram, Stéphane Blouin, Victoria Schemenz, Wolfgang Wagermaier, Peter Fratzl, Markus A. Hartmann, Jochen Zwerina, Nadja Fratzl-Zelman and Joan C. Marini
Alterations of bone material properties in growing Ifitm5/BRIL p.S42 knock-in mice, a new model for atypical type VI osteogenesis imperfecta
Bone **162**, 116451 (2022)
DOI: [10.1016/j.bone.2022.116451](https://doi.org/10.1016/j.bone.2022.116451)
36. Barbara M. Misof, Stéphane Blouin, Vicente F.C. Andrade, Paul Roschger, Victoria Z.C. Borba, Markus A. Hartmann, Jochen Zwerina, Robert R. Recker and Carolina A. Moreira
No evidence of mineralization abnormalities in iliac bone of premenopausal women with type 2 diabetes mellitus
Journal of Musculoskeletal and Neuronal Interactions **22**, 305 (2022)
PMID: [36046986](https://pubmed.ncbi.nlm.nih.gov/36046986/)
35. Riikka E. Mäkitie, Stéphane Blouin, Ville-Valtteri Välimäki, Sandra Pihlström, Kirsi Määttä, Minna Pekkinen, Nadja Fratzl-Zelman, Outi Mäkitie and Markus A. Hartmann
Abnormal bone tissue organization and osteocyte lacuno-canalicular network in early-onset osteoporosis due to SGMS2 mutations
JBMR Plus **5**, e10537 (2021)
DOI: [10.1002/jbm4.10537](https://doi.org/10.1002/jbm4.10537)
34. Alexandra Tits, Erwan Plougouven, Stéphane Blouin, Markus A. Hartmann, Jean-François Kaux, Pierre Drion, Justin Fernandez, G. Harry van Lenthe and Davide Ruffoni
Local anisotropy in mineralized fibrocartilage and subchondral bone beneath the tendon-bone interface
Scientific Reports **11**, 16534 (2021)
DOI: [10.1038/s41598-021-95917-4](https://doi.org/10.1038/s41598-021-95917-4)

33. Karol Alí Apaza Alccayhuaman, Stefan Tangl, Stéphane Blouin, Markus A. Hartmann, Patrick Heimel, Ulrike Kuchler, Jung-Seok Lee and Reinhard Gruber
Osteoconductive properties of a volume-stable collagen matrix in rat calvaria defects: a pilot study
Biomedicines **9**, 732 (2021)
DOI: [10.3390/biomedicines9070732](https://doi.org/10.3390/biomedicines9070732)
32. Matthias Mähr, Stéphane Blouin, Martina Behanova, Barbara M. Misof, Francis H. Glorieux, Jochen Zwerina, Frank Rauch, Markus A. Hartmann and Nadja Fratzl-Zelman
Increased osteocyte lacunae density in the hypermineralized bone matrix of children with osteogenesis imperfecta type I
International Journal of Molecular Sciences **22**, 4508 (2021)
DOI: [10.3390/ijms22094508](https://doi.org/10.3390/ijms22094508)
31. Benjamin Hadzimuratovic, Judith Haschka, Markus A. Hartmann, Stéphane Blouin, Nadja Fratzl-Zelman, Jochen Zwerina and Roland Kocijan
Impact of tenofovir disoproxil-induced Fanconi Syndrome on bone material quality: a case report
JBMR Plus **5**, e10506 (2021)
DOI: [10.1002/jbm4.10506](https://doi.org/10.1002/jbm4.10506)
30. Markus A. Hartmann, Stéphane Blouin, Barbara M. Misof, Nadja Fratzl-Zelman, Paul Roschger, Andrea Berzlanovich, Gerlinde M. Gruber, Peter C. Brugger, Jochen Zwerina and Peter Fratzl
Quantitative Backscattered Electron Imaging of bone using a thermionic or a field emission electron source
Calcified Tissue International **109**, 190 (2021)
DOI: [10.1007/s00223-021-00832-5](https://doi.org/10.1007/s00223-021-00832-5)
29. Nadja Fratzl-Zelman, Katherine Wesseling-Perry, Riikka E. Mäkitie, Stéphane Blouin, Markus A. Hartmann, Jochen Zwerina, Ville-Valtteri Välimäkie, Christine M. Laine, Matti J. Välimäki, Renata C. Pereira and Outi Mäkiti
Bone material properties and response to teriparatide in osteoporosis due to WNT1 and PLS3 mutations
Bone **146**, 115900 (2021)
DOI: [10.1016/j.bone.2021.115900](https://doi.org/10.1016/j.bone.2021.115900)
28. Matthias Mähr, Stéphane Blouin, Barbara M. Misof, Eleftherios P. Paschalis, Markus A. Hartmann, Jochen Zwerina and Nadja Fratzl-Zelman
Bone properties in Osteogenesis imperfecta: what can we learn from a bone biopsy beyond histology?
Wiener Medizinische Wochenschrift **171**, 111 (2021)
DOI: [10.1007/s10354-021-00818-w](https://doi.org/10.1007/s10354-021-00818-w)
27. Huzaiifa Shabbir and Markus A. Hartmann
A high coordination of cross-links in fiber bundles prevents local strain concentrations
Computational Materials Science **184**, 109849 (2020)
DOI: [10.1016/j.commatsci.2020.109849](https://doi.org/10.1016/j.commatsci.2020.109849)

26. Eleftherios P. Paschalis, Klaus Klaushofer and Markus A. Hartmann
Material properties and osteoporosis
F1000Research **8**(F1000 Faculty Rev), 1481 (2019)
DOI: [10.12688/f1000research.18239.1](https://doi.org/10.12688/f1000research.18239.1)
25. Huzaiifa Shabbir, Christoph Dellago and Markus A. Hartmann
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Biomimetics **4**, 12 (2019)
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24. Huzaiifa Shabbir and Markus A. Hartmann
Influence of reversible cross-link coordination on the mechanical behavior of a linear polymer chain
New Journal of Physics **19**, 093024 (2017)
DOI: [10.1088/1367-2630/aa87d2](https://doi.org/10.1088/1367-2630/aa87d2)
23. Abraao C. Torres-Dias, Tiago F. T. Cerqueira, Wenwen Cui, Miguel A. L. Marques, Silvana Botti, Denis Machon, Markus A. Hartmann, Yiwei Sun, David J. Dunstan and Alfonso San-Miguel
From mesoscale to nanoscale mechanics in single-wall carbon nanotubes
Carbon **123**, 145 (2017)
DOI: [10.1016/j.carbon.2017.07.036](https://doi.org/10.1016/j.carbon.2017.07.036)
22. Christian Prehal, Christian Koczwar, Nicolas Jäckel, Anna Schreiber, Max Burian, Heinz Amenitsch, Markus A. Hartmann, Volker Presser and Oskar Paris
Quantification of ion confinement and desolvation in nanoporous supercapacitors with modelling and in-situ X-ray scattering
Nature Energy **2**, 16215 (2017)
DOI: [10.1038/nenergy.2016.215](https://doi.org/10.1038/nenergy.2016.215)
21. David Holec, Liangcai Zhou, Helmut Riedl, Christian M. Koller, Paul. H. Mayrhofer, Martin Friák, Mojmír Šob , Fritz Körmann, Jörg Neugebauer, Denis Music, Markus A. Hartmann and Franz D. Fischer
Atomistic Modeling-Based Design of Novel Materials
Advanced Engineering Materials **19**, 1600688 (2017)
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20. S. Soran Nabavi and Markus A. Hartmann
Weak reversible cross-links may decrease the strength of aligned fiber bundles
Soft Matter **12**, 2047 (2016)
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19. S. Soran Nabavi, Peter Fratzl and Markus A. Hartmann
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18. S. Soran Nabavi, Matthew J. Harrington, Peter Fratzl and Markus A. Hartmann
Influence of sacrificial bonds on the mechanical behavior of polymer chains
Bioinspired, Biomimetic and Nanobiomaterials **3**, 139 (2014)
DOI: [10.1680/BBN.14.00009](https://doi.org/10.1680/BBN.14.00009)

17. André Körnig, Markus A. Hartmann, Christian Teichert, Peter Fratzl and Damien Faivre
Magnetic force imaging of a chain of biogenic magnetite and Monte-Carlo analysis of tip-particle interaction
Journal of Physics D: Applied Physics **47**, 235403 (2014)
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16. S. Soran Nabavi, Matthew J. Harrington, Oskar Paris, Peter Fratzl and Markus A. Hartmann
The role of topology and thermal backbone fluctuations on sacrificial bond efficacy in mechanical metalloproteins
New Journal of Physics **16**, 013003 (2014)
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Chosen as one of the Highlight Papers 2014
15. Melanie Todt, Robert D. Bitsche, Markus A. Hartmann, Franz D. Fischer and Franz G. Rammerstorfer
Growth limit of carbon onions - A continuum mechanical study
International Journal of Solids and Structures **51**, 706 (2014)
DOI: [10.1016/J.IJSOLSTR.2013.10.038](https://doi.org/10.1016/J.IJSOLSTR.2013.10.038)
14. Markus A. Hartmann, Melanie Todt, Franz G. Rammerstorfer, Franz D. Fischer and Oskar Paris
Elastic properties of graphene obtained by computational mechanical tests
Europhysics Letters **103**, 68004 (2013)
DOI: [10.1209/0295-5075/103/68004](https://doi.org/10.1209/0295-5075/103/68004)
13. Maxim Erko, Markus A. Hartmann, Igor Zlotnikov, Clara Valverde Serrano, Peter Fratzl and Yael Politi
*Structural and mechanical properties of the arthropod cuticle: Comparison between the fang of the spider *Cupiennius salei* and the carapace of American lobster *Homarus americanus**
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12. Admir Masic, Luca Bertinetti, Roman Schuetz, Leonardo Galvis, Nadya Timofeeva, John W. C. Dunlop, Jong Seto, Markus A. Hartmann and Peter Fratzl
Observations of Multiscale, Stress-Induced Changes of Collagen Orientation in Tendon by Polarized Raman Spectroscopy
Biomacromolecules **12**, 3989 (2011)
DOI: [10.1021/BM201008B](https://doi.org/10.1021/BM201008B)
11. Markus A. Hartmann, John W. C. Dunlop, Yves J. M. Bréchet, Peter Fratzl and Richard Weinkamer
Trabecular bone remodelling simulated by a stochastic exchange of discrete bone packets from the surface
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10. Melanie Todt, Franz G. Rammerstorfer, Franz D. Fischer, Paul H. Mayrhofer, David Holec and Markus A. Hartmann
Continuum modeling of van der Waals interactions between carbon onion layers
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9. David Holec, Markus A. Hartmann, Franz D. Fischer, Franz G. Rammerstorfer, Paul H. Mayrhofer and Oskar Paris
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8. Markus A. Hartmann and Peter Fratzl
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7. John W. C. Dunlop, Markus A. Hartmann, Yves J. Bréchet, Peter Fratzl and Richard Weinkamer
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6. Stephan Kubowicz, Markus A. Hartmann, Jean Daillant, Milan K. Sanyal, Ved V. Agrawal, Christian Blot, Oleg Kononov and Helmuth Möhwald
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5. Thomas Zemb, David Carriere, Karine Glinel, Markus Hartmann, Annette Meister, Claire Vautrin, Nicolas Delorme, Andreas Fery and Monique Dubois
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4. Markus A. Hartmann, Richard Weinkamer, Thomas Zemb, Franz D. Fischer and Peter Fratzl
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3. Markus A. Hartmann, Richard Weinkamer, Peter Fratzl, Jiri Svoboda and Franz D. Fischer
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2. Richard Weinkamer, Markus A. Hartmann, Yves Brechet and Peter Fratzl
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1. Lorenz M. Stadler, Bogdan Sepiol, Richard Weinkamer, Markus Hartmann, Peter Fratzl,
Jan W. Kantelhardt, Federico Zontone, Gerhard Grübel and Gero Vogl
Long-term correlations distinguish coarsening mechanisms in alloys
Physical Review B **68**, 180101-R (2003)
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0. Gero Vogl and Markus Hartmann
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Book Chapters, Conference Proceedings & Abstracts

13. Nadja Fratzl-Zelman, Markus A. Hartmann, Jochen Zwerina and Stéphane Blouin
Bone mineralization density distribution and bone volume in adults with XLH after 48 weeks of Burosumab treatment: a paired biopsy study
Journal of Bone and Mineral Research **37**, S72 (2022)
12. Ghazal Hedjazi, Gali Guterman-Ram, Stéphane Blouin, Markus A. Hartmann, Victoria Schemenz, Wolfgang Wagermaier, Peter Fratzl, Jochen Zwerina, Nadja Fratzl-Zelman and Joan C. Marini
Novel murine model of atypical type VI osteogenesis imperfecta has altered matrix mineralization, osteocyte canalicular network and disordered collagen orientation
Journal of Bone and Mineral Research **37**, S169 (2022)
11. Barbara M. Misof, Nadja Fratzl-Zelman, Stéphane Blouin and Markus A. Hartmann
Knochengewebe und -material im gesunden Menschen und bei Krankheit
Journal für Mineralstoffwechsel & Muskuloskelettale Erkrankungen **27**, 98 (2020)
DOI: [10.1007/s41970-020-00122-w](https://doi.org/10.1007/s41970-020-00122-w)
10. Markus A. Hartmann, Melanie Todt and F. G. Rammerstorfer
Atomistic and continuum modelling of graphene and graphene-derived carbon nanostructures in: Structure and Multiscale Mechanics of Carbon Nanomaterials
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Editor: O. Paris
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9. Melanie Todt, Florian Toth, Markus A. Hartmann, David Holec, Megan J. Cordill, Franz D. Fischer and Franz G. Rammerstorfer
Computational Simulation of Instability Phenomena in Nanoparticles and Nanofilms
Computational Technology Reviews **10**, 89 (2014)
DOI: [10.4203/ctr.10.4](https://doi.org/10.4203/ctr.10.4)
8. Yiwei W. Sun, David J. Dunstan, Markus A. Hartmann and David Holec
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7. Melanie Todt, Markus A. Hartmann and Franz G. Rammerstorfer
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6. Oskar Paris, Markus A. Hartmann and Gerhard Fritz-Popovski
The Mineralised Crustacean Cuticle: Hierarchical Structure and Mechanical Properties
 in: Materials Design Inspired by Nature - Function through Inner Architecture
 RSC Publishing 2013
 Editors: Peter Fratzl, John W. C. Dunlop, Richard Weinkamer
 DOI: [10.1039/9781849737555-00180](https://doi.org/10.1039/9781849737555-00180)
5. Melanie Todt, Franz G. Rammerstorfer, Markus A. Hartmann, Oskar Paris and Franz D. Fischer
Shell-Models for Multi-Layer Carbon Nano-Particles in: Shell-Like Structures
 Series Title: Advanced Structured Materials **15**, 585 (2011), Springer
 Editors: H. Altenbach, V. A. Eremeyev
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4. Richard Weinkamer, Markus A. Hartmann, Yves Bréchet and Peter Fratzl
Architectural changes of trabecular bone caused by the remodeling process
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3. John W. C. Dunlop, Markus A. Hartmann, Yves Bréchet, Peter Fratzl and Richard Weinkamer
The relation between mechanical stimulus and cell response in trabecular bone remodeling
 Calcified Tissue International **80**, S51 (2007)
2. Markus A. Hartmann, Richard Weinkamer, Yves Bréchet and Peter Fratzl
How the behavior of osteoclasts and osteoblasts influences the architecture of trabecular bone
 Calcified Tissue International **78**, S72 (2006)
1. Richard Weinkamer, Markus A. Hartmann, Yves Bréchet and Peter Fratzl
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