

**Some publications about our technology:**

**a) Hydration Lubrication Mechanism and its origin**

Boundary lubrication under water

Briscoe W. H., Titmuss S., Tiberg F., Thomas R. K., McGillivray D. J. & Klein J. (2006) Nature. 444, 7116, p. 191-194

Fluidity of bound hydration layers

Raviv U. & Klein J. (2002) Science. 297, 5586, p. 1540-1543

Fluidity of water confined to subnanometre films

Raviv U., Laurat P. & Klein J. (2001) Nature. 413, 6851, p. 51-54

Hydration Lubrication: The Macromolecular Domain

Jahn S. & Klein J. (2015) Macromolecules. 48, 15, p. 5059-5075

Origins of hydration lubrication

Ma L., Gaisinskaya-Kipnis A., Kampf N. & Klein J. (2015) Nature Communications. 6, 6060.

Hydration lubrication: exploring a new paradigm

Gaisinskaya A., Ma L., Silbert G., Sorkin R., Tairy O., Goldberg R., Kampf N. & Klein J. (2012) Faraday Discussions. 156, p. 217-233

**b) Liposomes as exceptional boundary lubricants**

Poly-phosphocholination of liposomes leads to highly-extended retention time in mice joints

Lin W., Goldberg R. & Klein J. (2022) Journal of materials chemistry. B, Materials for biology and medicine. 10, 15, p. 8-

Poly-phosphocholinated Liposomes Form Stable Superlubrication Vectors

Lin W., Kampf N., Goldberg R., Driver M. J. & Klein J. (2019) Langmuir. 35, 18, p. 6048-6054

[Boundary Lubricants with Exceptionally Low Friction Coefficients Based on 2D Close-Packed Phosphatidylcholine Liposomes](#)

Goldberg R., Schroeder A., Silbert G., Turjeman K., Barenholz Y. & Klein J. (2011) *Advanced Materials*. 23, 31, p. 3517-+

[Interactions between Adsorbed Hydrogenated Soy Phosphatidylcholine \(HSPC\) Vesicles at Physiologically High Pressures and Salt Concentrations](#)

Goldberg R., Schroeder A., Barenholz Y. & Klein J. (2011) *Biophysical Journal*. 100, 10, p. 2403-2411

[Mechanical Stability and Lubrication by Phosphatidylcholine Boundary Layers in the Vesicular and in the Extended Lamellar Phases](#)

Sorkin R., Dror Y., Kampf N. & Klein J. (2014) *Langmuir*. 30, 17, p. 5005-5014

[Origins of extreme boundary lubrication by phosphatidylcholine liposomes](#)

Sorkin R., Kampf N., Dror Y., Shimoni E. & Klein J. (2013) *Biomaterials*. 34, 22, p. 5465-5475

[Liposomes as lubricants: beyond drug delivery](#)

Goldberg R. & Klein J. (2012) *Chemistry and Physics of Lipids*. 165, 4, p. 374-381

**c) Orthopedics-related publications**

[Preclinical In Vivo Safety of Poly-Phosphorylated Superlubrication Vectors for the Treatment of Osteoarthritis](#)

Ramot Y., Dolkart O. et al. (2022) *Toxicologic Pathology*. 50, 7, p. 787-782

[Cartilage-inspired, lipid-based boundary-lubricated hydrogels](#)

Lin W., Kluzek M., Iuster N., Shimoni E., Kampf N., Goldberg R. & Klein J. (2020) *Science*. 370, 6514, p. 335-338

[Lubrication of articular cartilage](#)

Jahn S. & Klein J. (2018) *Physics Today*. 71, 4, p. 48-54

[CHEMISTRY Repair or Replacement-A Joint Perspective](#)

Klein J. (2009) *Science*. 323, 5910, p. 47-48

[Molecular mechanisms of synovial joint lubrication](#)

Klein J. (2006) *Proceedings of The Institution Of Mechanical Engineers Part J-Journal Of Engineering Tribology*. 220, J8, p. 691-710