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Qualifications

Physical Chemistry, PhD, Water and Protein Solutions Studied by Field-Dependent Magnetic Relaxation, Faculty of Engineering, LTH
1998 Jan 1 → 2003 Oct 23
Award Date: 2003 Oct 23

Physical Chemistry, Master of Science, A Nuclear Magnetic Relaxation Dispersion Study of Oxytocin Hydration, Faculty of Science
1993 Aug 30 → 1998 Sept 3
Award Date: 1998 Sept 3

2010 → ... Excellent Teaching Practitioner, ETP

Employment

Senior lecturer
Biophysical Chemistry
Lund University
Lund, Sweden
2010 Nov 1 → present

Assistant dean
Faculty of Engineering, LTH
Lund University
Lund, Sweden
2020 Dec 17 → present

Deputy assistant professor
Lund university: Department of Chemistry
Lund, Sweden
2007 Jan 7 → 2010 Oct 31

High school teacher (programming)
Polhemskolan, Lund
Lund, Sweden
2006 Aug 11 → 2007 Jan 12

Postdoc
University of Copenhagen

Copenhagen, Denmark
2003 Nov 1 → 2006 Aug 15

Research outputs

Proton Transfer Kinetics in Histidine Side Chains Determined by pH-Dependent Multi-Nuclear NMR Relaxation

Raum, H. N., Modig, K., Akke, M. & Weininger, U., 2024 Aug, In: Journal of the American Chemical Society. 146, 32, p. 22284-22294 11 p.

Ligand-induced protein transition state stabilization switches the binding pathway from conformational selection to induced fit

Stenström, O., Diehl, C., Modig, K. & Akke, M., 2024 Apr 2, In: Proceedings of the National Academy of Sciences of the United States of America. 121, 14, p. e2317747121

Transition-State Compressibility and Activation Volume of Transient Protein Conformational Fluctuations

Dreydoppel, M., Dorn, B., Modig, K., Akke, M. & Weininger, U., 2021 Jun 3, In: JACS Au. 1, 6, p. 833-842 10 p.

Mapping the energy landscape of protein-ligand binding *via* linear free energy relationships determined by protein NMR relaxation dispersion

Stenström, O., Diehl, C., Modig, K., Nilsson, U. J. & Akke, M., 2021, In: RSC Chemical Biology. 2, 1, p. 259-265 7 p.

Rotamer jumps, proton exchange, and amine inversion dynamics of dimethylated lysine residues in proteins resolved by ph-dependent ¹H and ¹³C nmr relaxation dispersion

Weininger, U., Modig, K., Ishida, H., Vogel, H. J. & Akke, M., 2019 Nov 21, In: Journal of Physical Chemistry B. 123, 46, p. 9742-9750 9 p.

Dynamics of Aromatic Side Chains in the Active Site of FKBP12

Weininger, U., Modig, K., Geitner, A. J., Schmidpeter, P. A. M., Koch, J. R. & Akke, M., 2017 Jan 10, In: Biochemistry. 56, 1, p. 334-343 10 p.

Molecular insights into substrate recognition and catalytic mechanism of the chaperone and FKBP peptidyl-prolyl isomerase SlyD

Quistgaard, E. M., Weininger, U., Ural-Blimke, Y., Modig, K., Nordlund, P., Akke, M. & Löw, C., 2016 Sept 23, In: BMC Biology. 14, 1, 82.

Off-resonance rotating-frame relaxation dispersion experiment for (13)C in aromatic side chains using L-optimized TROSY-selection.

Weininger, U., Brath, U., Modig, K., Teilum, K. & Akke, M., 2014, In: Journal of Biomolecular NMR. 59, 1, p. 23-29

Ring Flips Revisited: C-13 Relaxation Dispersion Measurements of Aromatic Side Chain Dynamics and Activation Barriers in Basic Pancreatic Trypsin Inhibitor

Weininger, U., Modig, K. & Akke, M., 2014, In: Biochemistry. 53, 28, p. 4519-4525

High water mobility on the ice-binding surface of a hyperactive antifreeze protein.

Modig, K., Qvist, J., Marshall, C. B., Davies, P. L. & Halle, B., 2010, In: Physical chemistry chemical physics : PCCP. 12, Online 29th July 2010, p. 10189-10197

Protein Flexibility and Conformational Entropy in Ligand Design Targeting the Carbohydrate Recognition Domain of Galectin-3.

Diehl, C., Engström, O., Delaine, T., Håkansson, M., Genheden, S., Modig, K., Leffler, H., Ryde, U., Nilsson, U. & Akke, M., 2010, In: Journal of the American Chemical Society. 132, p. 14577-14589

Structure and Dynamics of Ribosomal Protein L12: An Ensemble Model Based on SAXS and NMR Relaxation

Bernado, P., Modig, K., Grela, P., Svergun, D. I., Tchorzewski, M., Pons, M. & Akke, M., 2010, In: Biophysical Journal. 98, 10, p. 2374-2382

Conformational entropy changes upon lactose binding to the carbohydrate recognition domain of galectin-3.

Diehl, C., Genheden, S., Modig, K., Ryde, U. & Akke, M., 2009, In: *Journal of Biomolecular NMR*. 45, 1-2, p. 157-169

Kursutvärderingssystemet CEQ vid LTH: uppfylls avsedda syften?

Björnsson, L., Dahlbom, M., Modig, K. & Sjöberg, A., 2009, *Proceedings 2:a Utvecklingskonferensen för Sveriges ingenjörsutbildningar*. LTH

Students' micro cultures determine the quality of teaching!

Roxå, T. & Modig, K., 2009.

Model-independent interpretation of NMR relaxation data for unfolded proteins: the acid-denatured state of ACBP

Modig, K. & Poulsen, F. M., 2008, In: *Journal of Biomolecular NMR*. 42, 3, p. 163-177

Protein conformational transitions as seen from the solvent: magnetic relaxation dispersion studies of water, cosolvent, and denaturant interactions with nonnative proteins

Halle, B., Denisov, V., Modig, K. & Davidovic, M., 2005, *Protein Folding Handbook*. Buchner, J. & Kiefhaber, T. (eds.). John Wiley & Sons Inc., p. 201-246

Dynamics of protein and peptide hydration

Modig, K., Liepinsh, E., Otting, G. & Halle, B., 2004, In: *Journal of the American Chemical Society*. 126, 1, p. 102-114

Temperature-dependent hydrogen-bond geometry in liquid water.

Modig, K., Pfrommer, B. G. & Halle, B., 2003, In: *Physical Review Letters*. 90, 7, p. 075502-1-075502-4

Trifluoroethanol-induced beta -> alpha transition in beta-lactoglobulin: hydration and cosolvent binding studied by ²H, ¹⁷O, and ¹⁹F magnetic relaxation dispersion.

Kumar, S., Modig, K. & Halle, B., 2003, In: *Biochemistry*. 42, 46, p. 13708-13716

Water and protein solutions studied by field-dependent magnetic relaxation

Modig, K., 2003, *Biophysical Chemistry (LTH)*, Lund University. 248 p.

Water and urea interactions with the native and unfolded forms of a beta-barrel protein.

Modig, K., Kurian, E., Prendergast, F. G. & Halle, B., 2003, In: *Protein Science*. 12, 12, p. 2768-2781

Water dynamics in the large cavity of three lipid-binding proteins monitored by ¹⁷O magnetic relaxation dispersion.

Modig, K., Rademacher, M., Lücke, C. & Halle, B., 2003, In: *Journal of Molecular Biology*. 332, 4, p. 965-977

Proton magnetic shielding tensor in liquid water

Modig, K. & Halle, B., 2002, In: *Journal of the American Chemical Society*. 124, 40, p. 12031-12041