

# Kai H. Griebenow

Nanoscientist

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## Education

- Postdoctoral Research Fellow, [MIT](#) (1996)
- Ph.D., [Max-Planck Institute for Radiation Chemistry/University Dusseldorf](#) (1992)

## Appointments

2003–present Professor, UPR-RP Chemistry, San Juan, PR, Puerto Rico

1999–2003 Associate Professor, UPR-RP Chemistry, San Juan, PR, Puerto Rico

1996–1999 Assistant Professor, UPR-RP Chemistry, San Juan, PR, Puerto Rico

## Honors and awards

- Otto Hahn Award — Recognizes the best Ph.D. works in a given year obtained at a Max-Planck-Institute. Mine was given for clarifying the protein-free organization of bacteriochlorophylls in the chlorosomes of the filamentous bacterium *Chloroflexus aurantiacus.*, Max-Planck (1992)

## Publications

1. C. R. Cabrera, M. Flynn, I. Gonzalez-Gonzalez, K. H. Griebenow, and E. Nicolau, "Bioelectrochemical Degradation of Urea at Platinized Boron Doped Diamond Electrodes for Bioregenerative Systems", *Advance in Space Research*, (2009)
2. K. H. Griebenow and R. J. Sola, "Effects of glycosylation on the stability of protein pharmaceuticals.", *Journal of Pharmaceutical Sciences*, 98, 1223 (2009)
3. K. H. Griebenow, I. Rivera-Rivera, J. A. Rodríguez-Martínez, and R. J. Solá, "Enzymatic activity and thermal stability of PEG- $\alpha$ -chymotrypsin conjugates", *Biotechnol. Lett.*, (2009)
4. G. Barletta, B. Castillo, A. Ferrer, K. H. Griebenow, and R. J. Sola, "Effect of PEG modification on subtilisin Carlsberg activity, enantioselectivity, and structural dynamics in 1,4-dioxane.", *Biotechnol. Bioeng.*, 99, 9 (2008)
5. K. H. Griebenow, B. L. Montalvo, Y. Pacheco, B. Sosa, G. Sánchez, and D. Vélez, "Formation of spherical protein nanoparticles without impacting protein integrity.", *Nanotechnology*, 19, 465103 (2008)
6. G. Barletta, B. Castillo, H. R. Cintron-Colon, K. H. Griebenow, I. Rivera-Rivera, J. A. Rodriguez-Martinez, and R. J. Sola, "Stabilization of alpha-chymotrypsin upon PEGylation correlates with reduced structural dynamics.", *Biotechnol. Bioeng.*, 101, 1142 (2008)

## Grants

1. K. H. Griebenow. Chemical Protein Glycosylation, National Institutes of Health, NIGMS-MBRS, 4 years, January 2009, Single PI, Approved, \$925,000.
2. K. H. Griebenow. Long-range Improvement of Chemistry Education at UPR-RP, United States Department of Education, MSEIP, 3 years, October 2008, Single PI, Approved, \$594,790.
3. F. M. Aliev, C. R. Cabrera, L. F. Fonseca, K. H. Griebenow, A. J. Hernández, Y. Ishikawa, R. S. Katiyar, M. M. Martínez, A. R. Mayol, G. Morell, W. Otaño, R. G. Raptis, and B. R. Weiner. Center for Advanced Nanoscale Materials (CANM) NASA University Research, National Aeronautics and Space Administration, URC, 5 years, October 2008, Multiple PIs, Approved, \$6,000,000.

## Presentations

1. K. H. Griebenow, M. Pagan, and R. J. Sola (March 2009) "Investigating the role of protein structural dynamics in regulating the catalytic mechanism of subtilisin-like proteases." in 33rd FEBS Congress & 11th IUBMB Conference. .
2. K. H. Griebenow and R. J. Sola (March 2009) "Modulation of protein biophysical properties through chemical glycosylation: biochemical insights and biomedical implications." in XXVIII Congreso Latinoamericano de Química.
3. L. Diaz and K. H. Griebenow (March 2009) "Introducing Method Development through Multivariable Experimental Design." in The SoTL Commons Conference.

4. K. H. Griebenow (July 2008) "Chemical Protein Glycosylation: A new Approach to Protein Stabilization." in XXVIII Congreso Latinoamericano de Química.
5. K. H. Griebenow and J. A. Rodríguez Martínez (July 2008) "Increasing  $\alpha$ -Chymotrypsin Thermodynamic Stability upon Covalent Modification with Poly(ethylene) Glycol Correlates with Reduced Structural Dynamics" in XXVIII Congreso Latinoamericano de Química.
6. G. M. Flores Fernández and K. H. Griebenow (July 2008) "Investigating the molecular mechanisms of moisture-induced solid-state instability of protein pharmaceuticals." in XXVIII Congreso Latinoamericano de Química.
7. K. H. Griebenow, M. Pagan, and R. J. Sola (July 2008) "Investigating the Role of Protein Structural Dynamics in Regulating the Catalytic Mechanism of Subtilisin-like Proteases." in XXVIII Congreso Latinoamericano de Química.
8. C. R. Cabrera, K. H. Griebenow, J. Méndez, E. Nicolau, and R. J. Solá (July 2008) "Adsorption and Biophysical Characterization of Alcohol Dehydrogenase on Diamond Nanoparticles." in XXVIII Congreso Latinoamericano de Química.
9. G. Barletta, B. Castillo, A. Ferrer, K. H. Griebenow, and R. Sola (July 2008) "Effect of PEG modification on subtilisin Carlsberg activity, enantioselectivity, and structural dynamics in 1,4 dioxane." in XXVIII Congreso Latinoamericano de Química.
10. J. Alvelo, K. H. Griebenow, B. L. Montalvo, B. Sosa, and D. Vélez (July 2008) "Formation of Stable Protein Nanospheres." in XXVIII Congreso Latinoamericano de Química.
11. K. H. Griebenow and Y. Pacheco (July 2008) "Nanoparticulate Protein Formulations." in XXVIII Congreso Latinoamericano de Química.
12. J. Alvelo, K. H. Griebenow, B. Montalvo, and B. Sosa (July 2008) "Protein Nanoparticle Formation and Encapsulation in Biocompatible Polyesters for Sustained Delivery." in XXVIII Congreso Latinoamericano de Química.
13. C. R. Cabrera, I. González, K. H. Griebenow, and E. Nicolau (July 2008) "Degradation of Urea at Nano-Platinized Boron Doped Diamond Electrodes for Bioregenerative Applications. " in 37th COSPAR Scientific Assembly (Committee on Space Research).
14. C. R. Cabrera, K. H. Griebenow, J. Mendez, E. Nicolau, and R. J. Sola (July 2008) "Adsorption and biophysical characterization of alcohol dehydrogenase on diamond nanoparticles for the development of biomedical fuel cells." in 33rd FEBS Congress & 11th IUBMB Conference.
15. G. Flores, K. H. Griebenow, and R. J. Sola (July 2008) "Investigating the molecular mechanisms of moisture induced solid-state instability of protein pharmaceuticals. " in 33rd FEBS Congress & 11th IUBMB Conference.