



**Department of Chemistry**  
**Faculty of Science / University of Peradeniya**



## Dr. R. J. K. Udayana Ranatunga

*B.Sc. (Perad.), Ph. D (UT Dallas, USA)*

### Senior Lecturer

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## About Me

Udayana Ranatunga is a computational chemist working in the fields of nanotechnology, surface science and biophysics. He is an Alumnus of the University of Peradeniya, and the University of Texas at Dallas.

## Higher Education Qualifications

🎓 **PhD**

University of Texas at Dallas - USA  
(2012)

🎓 **MSc**

University of Texas at Dallas - USA  
(2009)

🎓 **BSc**

University of Peradeniya - Sri Lanka  
(2006)

## Awards, Scholarships, Memberships & Fellowships



Nothing to show under this subheading !!!

## Positions Held







Senior Student Councillor- (2013 – 2015)



Director - Science-Industry Interaction Cell- (2019-present)








## My Teachings

-  CH109: Elementary Chemistry Laboratory II
-  CH228: Organic Chemistry Laboratory
-  CH342: Computer Applications and Instrumentation
-  CH437: Modern Topics in Physical Chemistry

## Research Interests (Research Fields/ Projects)

Research focus is mainly on the computational and theoretical study of 'soft' nanoparticles, particularly in relation to their physical behaviour and energetics.

## Ongoing Research and Projects

-  **The study and modeling of dendrimers, and their drug loading capacity**
-  **The energetics and interactions of cyclodextrin inclusion complexes**
-  **Cell penetrating peptides and their interactions with cargo and cellular membranes**  
(Collaboration with Prof. D. Nedra Karunaratne)
-  **Photodynamics and Energy levels of substituted furylfulgides**  
(collaboration with Dr. Champika V. Hettiarachchi)
-  **Design of Telomere structure stabilizing peptide scaffold**
-  **Coarse-Grained Force-field development**
-  **Using Computer Assisted Teaching/learning for Chemistry Education**

## Key Publications

 A Molecular Docking Study J. Biophys. - (2017)

Trends in the Binding of Cell Penetrating Peptides to siRNA:

 Soft Matter - (2011)

Molecular Dynamics Study of Nanoparticles and Non-Ionic Surfactant at an oil/water interface.

## Conferences



Nothing to show under this subheading !!!

## My Publications

Please goto the website.

<https://sci.pdn.ac.lk/chemistry/staff/Udayana-Ranatunga>