



Universiteit  
Leiden  
The Netherlands

## Biological diversity of photosynthetic reaction centers and the solid-state photo-CIDNP effect

Roy, E.

### Citation

Roy, E. (2007, October 11). *Biological diversity of photosynthetic reaction centers and the solid-state photo-CIDNP effect*. Solid state NMR group/ Leiden Institute of Chemistry (LIC), Faculty of Science, Leiden University. Retrieved from <https://hdl.handle.net/1887/12373>

Version: Corrected Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/12373>

**Note:** To cite this publication please use the final published version (if applicable).

# List of Publications

---

‘Photochemically induced dynamic nuclear polarization in photosystem I of plants observed by  $^{13}\text{C}$  magic-angle spinning NMR’

Alia, E. Roy, P. Gast, H.J. van Gorkom, H.J.M. de Groot, G. Jeschke, J. Matysik.  
*J. Am. Chem. Soc.* (2004) 126, 12819-12826.

‘Photo-CIDNP solid-state NMR on photosystems I and II: What makes P680 special?’

A. Diller, Alia, E. Roy, P. Gast, H.J. van Gorkom, J. Zaanen, H.J.M. de Groot, C. Glaubitz, J. Matysik.

*Photosynth. Res.* (2005) 84, 303-308.

‘Magnetic field dependence of  $^{13}\text{C}$  photo-CIDNP MAS NMR in plant photosystems I and II’

E. Roy, A. Diller, Alia, P. Gast, H.J. van Gorkom, H.J.M. de Groot, G. Jeschke, J. Matysik.  
*Appl. Mag. Res.* (2007) 31, 193-204.

‘Photochemically induced dynamic nuclear polarisation in the reaction center of the green sulphur bacterium *Chlorobium tepidum* observed by  $^{13}\text{C}$  MAS NMR’

E. Roy, Alia, P. Gast, H.J. van Gorkom, H.J.M. de Groot, G. Jeschke, J. Matysik.  
*Biochim. Biophys. Acta* (2007) 1767, 610-615.

‘ $^{15}\text{N}$ -photo-CIDNP MAS NMR analysis of the electron donor of photosystem II’

A. Diller, E. Roy, P. Gast, H.J. van Gorkom, H.J.M. de Groot, C. Glaubitz, G. Jeschke, J. Matysik, A. Alia.

*Proc. Natl. Acad. Sci. U. S. A.* (2007) 104, 12843-12848.

‘ $^{13}\text{C}$  photo-CIDNP MAS NMR on the reaction center of the green sulphur bacterium at two different magnetic fields’

E. Roy, A. Alia, P. Gast, H.J. van Gorkom, G. Jeschke, J. Matysik.

Proceedings of the 14<sup>th</sup> International Congress on Photosynthesis, (J.F. Allen, E. Gantt, J.H. Golbeck and B. Osmond Eds.), Springer Dordrecht, submitted.

‘Photo-CIDNP in isolated membrane fragments of *Heliobacillus mobilis* observed by  $^{13}\text{C}$  MAS NMR’

E. Roy, A. Alia, T. Rohmer, P. Gast G. Jeschke, J. Matysik.



# Curriculum Vitae

---

In 1994, after completing high school education, I started my studies in the department of Bioscience in Jamia Millia Islamia University in New Delhi. I obtained my bachelor's degree in Biosciences in 1999 and proceeded with my masters, with subject's biochemistry, animal physiology, plant physiology, microbiology and environmental biology. In the summer of 2000 I started with my masters dissertation, entitled "*Refining the protocol for regeneration of Sorghum bicolor (L) Moench from scutellum*", in the Plant Physiology and Biotechnology Laboratory under the supervision of Prof. P. Saradhi. I did an internship for a month in molecular biology techniques at the National Environmental Engineering Research Institute in Nagpur. I received my master's degree in June 2001. In October 2001 I was employed at the Central Institute of Cotton Research, in the Department of Biotechnology at Nagpur in a research project aimed for developing transgenic cotton for insect resistance.

In June 2003 I started my PhD in the solid-state NMR group of Prof H.J.M. de Groot, under the supervision of Dr. J. Matysik. During my PhD I attended the 35<sup>th</sup> Spring school "Physics meets Biology" organised by the Institute of Solid State Research in 2004 at Jülich and had the opportunity to present my work in the form of posters at the 13<sup>th</sup> International Congress of Photosynthesis (2004) at Montreal, Canada, 26<sup>th</sup> Annual meeting on Magnetic Resonance (2004) at Aachen, EUROMAR (2005) at Veldhoven, Netherlands, Spin-Chemistry meeting (2005) at Oxford, Photosynthesis in the post genomic era (2006) at Pushchino, Russia, the 14<sup>th</sup> International Congress of Photosynthesis (2007) in Glasgow and XXIII<sup>rd</sup> International Conference of Photochemistry (2007) in Köln.



# Nawoord

---

The years in Leiden have been memorable. I spent considerable time in the Biophysics group for sample preparation. A congenial atmosphere in the lab was provided by Wouter, Tatiana, Mohamad, Yan and Lu-Ning. I worked with Drè, whose expertise in handling bacterial cultures and his aid in emergency situations was beneficial. The stimulating discussions with Peter were helpful. Alia shared her experience and knowledge in sample preparation since my first year. Johan Hollander, Fons Lefeber and Kees Erkelens were always helpful with the solid-state NMR setup. The complex theory behind photo-CIDNP was made simple to understand by Prof. Gunnar Jeschke of the University of Konstanz who gave his precious time to answer any queries.

The time spent with Adriaan, Alexey, Arjan van Wijk, Ania, Anjali, Eugenio, Francesco, Frans, Geerten, Ido, Ineke, Jan, Kathick, Louise, Piotr, Prasad, Prativa, Richard, Rob de Jong, Samira, Sylvia, Suzanne and Thierry, was enjoyable. Liesbeth has always extended a warm hearted welcome and helped with administrative forms. The conversations with Rob van der Steen, Reinier and Arjan Siebum always provided the welcome relief from mundane days and melancholy. I am grateful to Niels for having taken the time for the Dutch translation of my thesis summary. I will always remember Anna, Prashant, Shipra and Swapna for being great friends.

The Banerji family has always welcomed me and I am grateful for their help during my convalescence. Mishal, your positive attitude provided the much needed motivation in the past years. I am indebted to my parents who have always been encouraging, jovial and patient listeners especially during the trying times.