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

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

Esha Roy

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In loving memory of Dida
To my Parents

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List of Abbreviations

A	Primary electron acceptor
ADF	Amsterdam density functional
ALA	δ -Aminolevulenic acid
BChl	Bacteriochlorophyll
BPhe	Bacteriopheophytin
Chl	Chlorophyll
<i>C.</i>	<i>Chlorobium</i>
CD	Circular dichroism
CSA	Chemical shift anisotropy
DD	Differential decay
DFT	Density functional theory
DR	Differential relaxation
DZ	Double-zeta basis set
EDTA	Ethylene diamino tetra acetate
ENDOR	Electron nuclear double resonance
EPR	Electron paramagnetic resonance
ESEEM	Electron spin echo envelope modulation
FMO	Fenna Mathew Olson
FTIR	Fourier transfer infrared
<i>Hba.</i>	<i>Heliobacillus</i>
IUPAC	International union of pure and applied chemistry
LH I	Light harvesting complex I
LH II	Light harvesting complex II
MAS	Magic angle spinning
NMR	Nuclear magnetic resonance
P	Electron donor
PDB	Protein data bank
Phe	Pheophytin

Photo-CIDNP	Photo-chemically induced dynamic nuclear polarisation
ppm	parts per million
PSI	Photosystem I
PSII	Photosystem II
<i>Rb.</i>	<i>Rhodobacter</i>
RC	Reaction center
RNA	Ribonucleic acid
rRNA	Ribosomal ribonucleic acid
SOMO	Singly occupied molecular orbital
SDS-PAGE	Sodium dodecyl sulphate polyacrylamide gel electrophoresis
TPPM	Two pulse-phase modulation
TRIPLE	Electron nuclear nuclear triple resonance
TSM	Three spin mixing
TZP	Triple zeta polarisation
WT	Wild type
ZORA	Zero order regular approximation

