

QUANTUM BIOLOGY AND PHOTOSYNTHESIS

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Program

Wednesday 29th January

14:00-14:50: Intro Photosynthesis and Quantum effects in Photosynthesis and Biology (Rienk)

14:50-15:00: Break

15:00-15:30: Discussion (Rienk)

15:30-16:00: Break

16:00-16:50: Intro Biophysics: proteins, pigments, membranes, disorder.

A case study: the Photosystem II Reaction Center (Elisabet)

16:50-17:00: Break

17:00-17:30: Discussion (Elisabet)

Material: Rienk lecture notes: Ch 1, 2, 4; ArndtHFSPJournal2009; Ball Nature news; Lambert
ature Physics 2012. Questions from students.

Thursday 30th January

14:00-14:50: Light Harvesting in Photosynthesis (RvG)

14:50-15:00: Break

15:00-15:30: Discussion (RvG)

15:30-16:00: Break

16:00-16:50: Ultrafast Spectroscopy: Transient Absorption and Two-Dimensional Electronic
Spectroscopy (2DES) (Elisabet)

16:50-17:00: Break

17:00-17:30 : Discussion (Elisabet)

Material: Rienk lecture notes: Ch 5,6; ScholesNatChem2011. Transient Absorption:
BereraPhotosynthRes2009. 2DES: ReadPhotosynthRes2009, SchlauCohenIEEE2011,
GinsbergAccountsChemRes2009. Questions from students.

Friday 31st January

14:00-14:50: Electron Transfer in Photosynthesis (RvG)

14:50-15:00: Break

15:00-15:30: Discussion (RvG)

15:30-16:00: Break

16:00-16:50: Electron Transfer in the Photosystem II Reaction Center (Elisabet)

16:50-17:00: Break

17:00-17:30: Discussion (Elisabet)

Material: Rienk lecture notes: Ch 7,8; MoserNature1992, Questions from students.

Saturday 1st February

14:00-14:50: Energy Transport in Complex (Disordered) Media (AB and Thomas Wellens?)

14:50-15:00: Break

15:00-15:45: Discussion

15:45-16:15: Break

16:15-17:00: Quantum Effects in Photosynthesis and Biology: General Overview (RvG, AB,
Elisabet)

17:00-17:10: Break

17:10-18:00: General Discussion (RvG, AB, Elisabet)

Material: Rienk lecture notes ch 9; RvG/ER QB-chapter; Papers:

HuelgaContemporaryPhysics2013, , ArndtHFSPJournal2009; Questions from students.