

EARLY STAGE RESEARCHER

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**Qingli Jing**

PROJECT: *Kinetic energy release spectra in dissociative ionization of diatomic molecules*

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Host institution: Aarhus University

Supervisors: Lars Bojer Madsen, Alicia Palacios, Federico Canova

Start date: September 1st, 2015

## SCIENTIFIC GOALS OF THE PROJECT

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to discover new theoretical models for a complete understanding of diatomic molecules with attosecond XUV-IR pump-probe spectroscopy,

in particular, new theory models with predictive power for the analysis of dissociative ionization in attosecond XUV-IR pump-probe spectroscopy will be explored,

at this stage, the Monte Carlo wave packet (MCWP) approach is applied to simulate the process of dissociative double ionization in molecules. Research on the influence of the excited states including singly-excited states and doubly-excited states, photoionization and autoionization, on the nuclear kinetic energy release spectra after dissociative double ionization is in progress.

## PUBLICATION

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Title: Laser-induced dissociative ionization of H<sub>2</sub> from the near-infrared to the mid-infrared regime

Journal: Physical Review A / 94/6

Link: [10.1103/PhysRevA.94.063402](https://doi.org/10.1103/PhysRevA.94.063402)

Reference: Q. Jing, L. B. Madsen

## OUTREACH ACTIVITIES

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Distribution of the Photonics Explorer Kit to Aarhus  
Statsgymnasium,

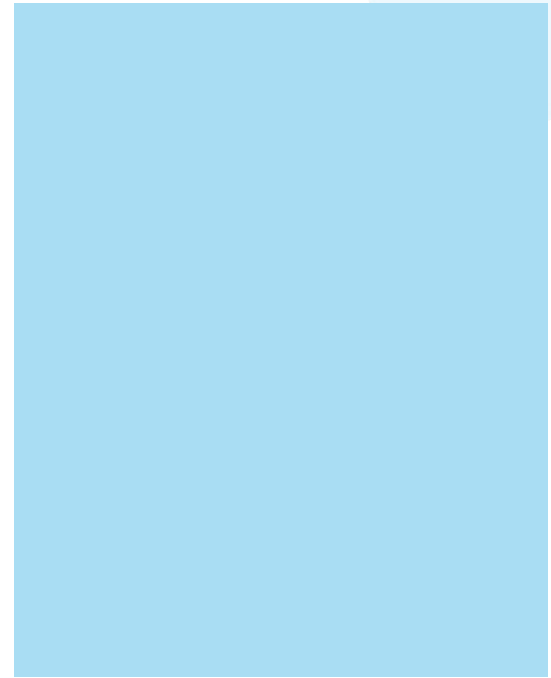
to 4 teachers

Organisation of a visit to AU Labs by Aarhus Statsgymnasium,

to 24 students

together with James Pickering

this year plan



## SECONDMENTS

this year

Planned secondments	Start (month)	Duration (months)	Objectives/ Content of the training
MAD	to be determined	1	<i>Ab initio</i> simulation of the dynamics of two-electron linear molecules on super computers TSMs available at MAD