Ultrafast fluorescence studies of excited-state dynamics of a few organic chromophores in solution
van Veldhoven, E.

Citation for published version (APA):

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: http://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.
# Contents

1 Introduction  
1.1 General 5  
1.2 Intramolecular bond twisting 8  
1.3 Solvent dynamics 12  
1.4 Outline of the thesis 15  
References 17  

2 Experimental 21  
2.1 Introduction 21  
2.2 Steady-state absorption and emission 21  
2.3 Time-correlated single-photon counting 22  
2.4 Femtosecond fluorescence upconversion 24  
2.5 Fluorescence depolarization measurements 29  
2.6 Samples 33  
References 34  

3 Subpicosecond Fluorescence Dynamics of Organic Light-Emitting Diode Tris(8-hydroxyquinolino) Metal Complexes 35  
   Abstract 35  
   3.1 Introduction 36  
   3.2 Experimental 37  
   3.3 Results 39  
      3.3.1 Alq3 39  
      3.3.2 Gaq3 45  
      3.3.3 8-hydroxyquinoline 47  
   3.4 Discussion 50  
   References 53
4 Femtosecond Fluorescence Anisotropy Studies of Solvation-Induced Intraligand Charge Transfer in Photoexcited Aluminum (III)-tris(8-hydroxyquinoline)

Abstract

4.1 Introduction

4.2 Experimental

4.3 Results

4.4 Discussion

References

5 Femtosecond Dynamics of IR-Molecules in Hybrid Materials

Abstract

5.1 Introduction

5.2 Experimental

5.3 Results and discussion

References

6 Femtosecond Fluorescence Studies of Two-dimensional Dynamics in Photoexcited Michler’s Ketones

Abstract

6.1 Introduction

6.2 Experimental

6.3 Results

6.3.1 Michler’s ketone

6.3.2 Blocked Michler’s ketone

6.4 Discussion

References
Contents

7 Simulations of the Excited-State Twisting Dynamics of Michler's Ketone in Solution
  Abstract 111
  7.1 Introduction 112
  7.2 Adiabatic coupling model 115
  7.3 Results 119
  7.4 Discussion 122
  References 125

Summary 127

Samenvatting 131

Dankwoord 135