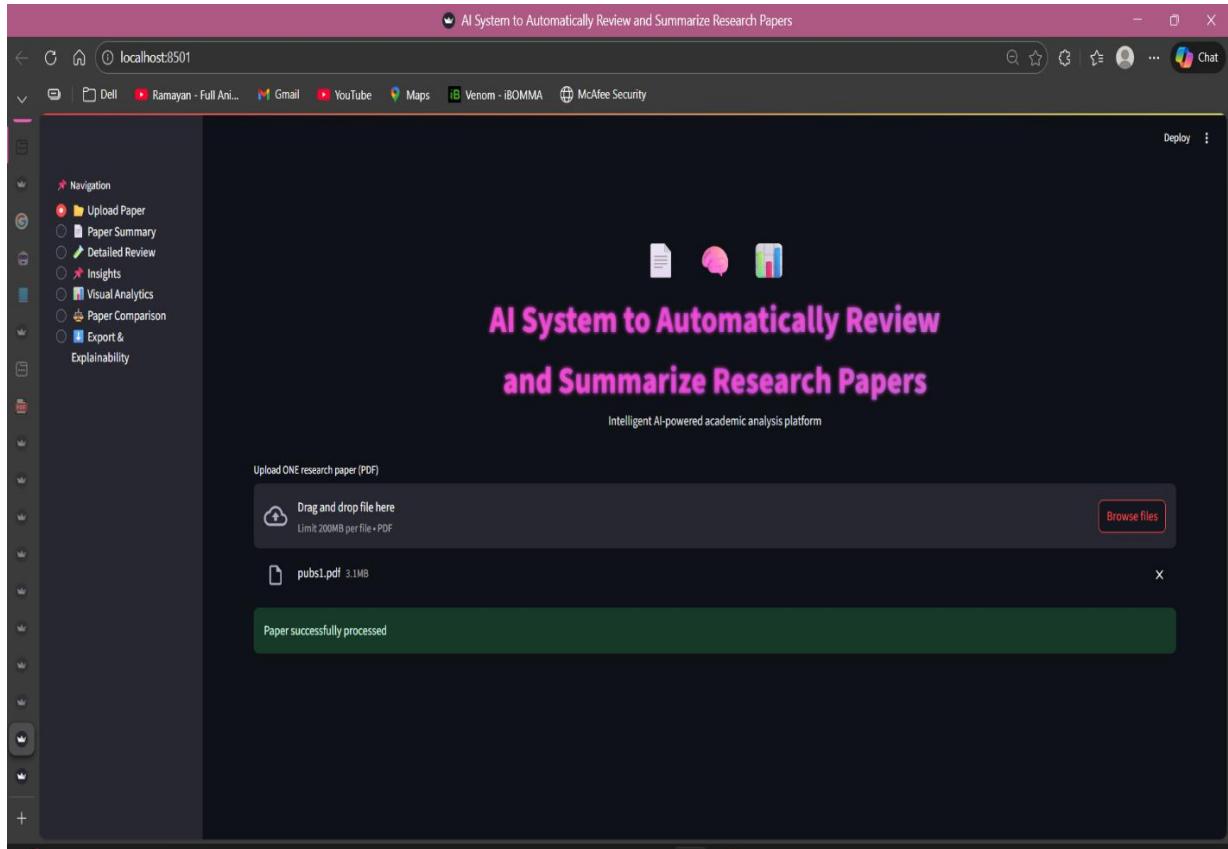


Frontend for the model-----Screenshots of that

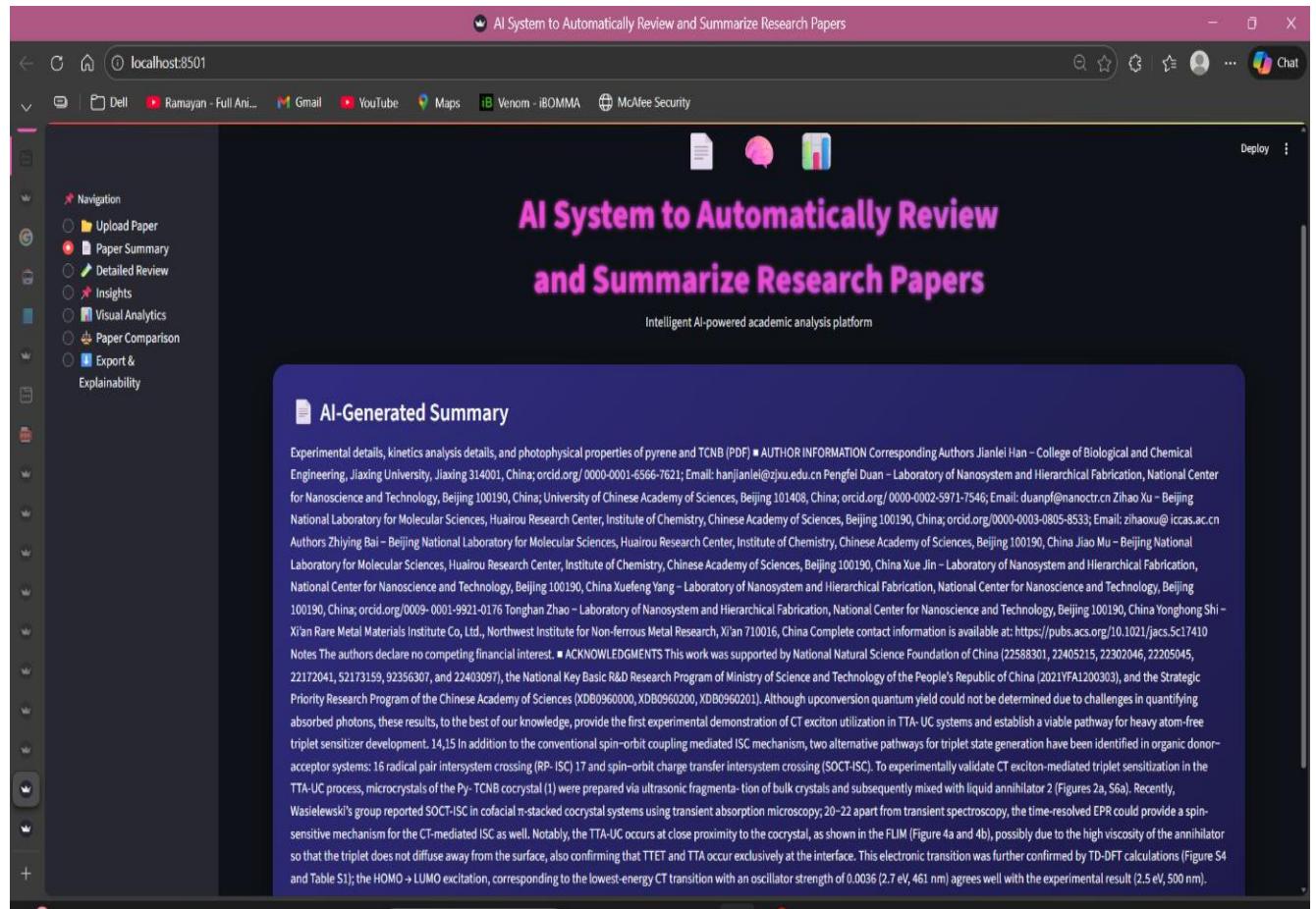
UPLOAD PAPER:



📁 Paper Upload – UI Functionality (Short Notes)

- The system provides a **simple and intuitive file upload interface** for research papers in **PDF format**.
- Users can upload **one research paper at a time** to ensure focused and accurate analysis.
- Once uploaded, the paper is **automatically processed in the background** without manual intervention.
- The uploaded PDF is **parsed and converted into machine-readable text** using a PDF extraction module.
- Text normalization is applied to remove noise such as extra spaces, headers, and irrelevant metadata.
- The processed content is **stored in session memory**, allowing smooth navigation across different analysis pages.
- A **success notification** confirms that the paper is ready for summarization and review.

SUMMARY:



Paper Summary – Brief Description

- The summary module automatically generates a **concise overview of the research paper** using AI techniques.
- It identifies and extracts the **most important sentences** based on keyword relevance and contextual importance.
- The summary helps users **quickly understand the core idea, objectives, and contributions** of the paper without reading the full document.
- This feature saves time and improves efficiency, especially when reviewing multiple research papers.
- The generated summary serves as a **foundation for deeper analysis**, such as detailed review and insights.

DETAILED REVIEW:

The screenshot shows the AI System's interface with a dark theme. On the left is a sidebar with navigation links: Upload Paper, Paper Summary, Detailed Review (which is selected), Insights, Visual Analytics, Paper Comparison, Export & Explainability. The main content area has a large title "AI System to Automatically Review and Summarize Research Papers" and a subtitle "Intelligent AI-powered academic analysis platform". Below this is a section titled "Abstract" with a sub-section "ABSTRACT". The abstract text discusses the fabrication of micro-crystals from pyrene and tetracyanobenzene via a solution-based method, supported by TD-DFT calculations and experimental results.

This screenshot shows the AI System's interface with a dark theme, similar to the first one. It includes the same sidebar with navigation links. The main content area is divided into several sections: "Methodology", "Results", and "Limitations". The "Methodology" section contains the detailed abstract text from the previous screenshot. The "Results" section provides a summary of the electronic transition and its confirmation through TD-DFT calculations and experimental results. The "Limitations" section is currently empty.

KEY INSIGHTS:

AI System to Automatically Review and Summarize Research Papers

localhost:8501

Navigation: Upload Paper, Paper Summary, Detailed Review, Insights, Visual Analytics, Paper Comparison, Export & Explainability.

Key Insights

- Research Strength: Strong focus on core concepts and experiments.
- Weakness: Limited discussion on real-world deployment.
- Contribution Level: Moderate to High
- Paper Type: Experimental / Methodology-driven

Complexity Indicator: [Progress Bar]

AI System to Automatically Review and Summarize Research Papers

localhost:8501

Navigation: Upload Paper, Paper Summary, Detailed Review, Insights, Visual Analytics, Paper Comparison, Export & Explainability.

Keyword Importance

A bar chart titled "Keyword Importance" showing the frequency of certain keywords. The y-axis ranges from 0 to 80. The x-axis lists keywords: triplet, transfer, exciton, energy, upconversion, figure, state, charge, acceptor, and annihilator. The bars show a decreasing trend from left to right.

Keyword	Importance
triplet	~85
transfer	~28
exciton	~26
energy	~24
upconversion	~24
figure	~24
state	~18
charge	~18
acceptor	~18
annihilator	~18

Topic Distribution

A pie chart titled "Topic Distribution" showing the percentage distribution of topics. The largest topic is "triplet" at 30%. Other topics include "transfer" (10%), "exciton" (9%), "energy" (9%), "upconversion" (9%), "figure" (9%), "state" (7%), "charge" (6%), "acceptor" (6%), and "annihilator" (6%).

Topic	Percentage
triplet	30%
transfer	10%
exciton	9%
energy	9%
upconversion	9%
figure	9%
state	7%
charge	6%
acceptor	6%
annihilator	6%

AI System to Automatically Review and Summarize Research Papers

Intelligent AI-powered academic analysis platform

Upload second paper

Drag and drop file here
Limit 200MB per file • PDF

Browse files

pubs.pdf 11.7MB

Paper A

Experimental details, kinetics analysis details, and photophysical properties of pyrene and TCBN (PDF) ■ AUTHOR INFORMATION Corresponding Authors Jianlei Han – College of Biological and Chemical Engineering, Jiaxing University, Jiaxing 314001, China; orcid.org/0000-0001-6566-7621; Email: hanjianlei@zjxu.edu.cn Pengfei Duan – Laboratory of Nanosystem and Hierarchical Fabrication, National Center for Nanoscience and Technology, Beijing 100190, China; University of Chinese Academy of Sciences, Beijing 101408, China; orcid.org/0000-0002-5971-7546; Email: duanpf@nanoctr.cn Zihao Xu – Beijing National Laboratory for Molecular Sciences, Huairou Research Center, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China; orcid.org/0000-0003-0805-8533; Email: zihaox@iccas.ac.cn Authors Zhiyong Bai – Beijing National Laboratory for Molecular Sciences, Huairou Research Center, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China; Jiao Mu – Beijing National Laboratory for Molecular Sciences, Huairou Research Center, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China Xue Jin – Laboratory of Nanosystem and Hierarchical Fabrication, National Center for Nanoscience and Technology, Beijing 100190, China; orcid.org/0009-0001-9921-0176 Tonghan Zhao – Laboratory of Nanosystem and Hierarchical Fabrication, National Center for Nanoscience and Technology, Beijing 100190, China Yonghong Shi – Xi'an Rare Metal Materials Institute Co., Ltd., Northwest Institute for Non-ferrous Metal Research, Xi'an 710016, China Complete contact information is available at: <https://pubs.acs.org/10.1021/jacs.5c17410> Notes The authors declare no competing financial interest. ■ ACKNOWLEDGMENTS This work was supported by National Natural Science Foundation of China (22588301, 22405215, 22302046, 22205045, 22172041, 52173159, 92356307, and 22403097), the National Key Basic R&D Research Program of Ministry of Science and Technology of the People's Republic of China (2021YFA1200303), and the Strategic Priority Research Program of the Chinese Academy of Sciences (XDB0960000, XDB0960200, XDB0960201). Although upconversion quantum yield could not be determined due to challenges in quantifying absorbed photons, these results, to the best of our knowledge, provide the first experimental demonstration of CT exciton utilization in TTA-UC systems and establish a viable pathway for heavy atom-free triplet sensitizer development. In addition to the conventional spin-orbit coupling mediated ISC mechanism, two alternative pathways for triplet state generation have been identified in organic donor-acceptor systems: 16 radical pair intersystem crossing (RP-ISC) 17 and spin-orbit charge transfer intersystem crossing (SOCT-ISC). To experimentally validate CT exciton-mediated

Paper B

One recent study which reduces particle size to MRI-relevant dimensions and relates the structure-MRI-property relationships of confined particles is by Gao et al., who utilized double emulsions generated through the combined effect of self-emulsification and phase separation of a water-dichloro-methane-hydrophobic iron oxide system to confine the self-assembly of magnetic nanoparticles (MNP), resulting in the preparation of hierarchically structured magnetic single-hole hollow spheres (MSHS) (Figure 2a,b). While the importance of optimizing various factors for a singular CA is key in the design of new high relaxivity CAs (considering water exchange, tumbling rate, electron spin relaxation, and other parameters for small-molecule CAs; and the influence of size, shape, crystallinity, surface modification, or element doping for magnetic inorganic nanoparticles), we have intentionally limited discussion of these aspects, as they have been extensively covered in prior reviews.¹⁸⁷ Recent advances in ligand architecture demonstrate progress toward closing this gap; for example, Botta and colleagues engineered α -aryl substituted Gd-DOTA chelates with relaxivities of $11.7 \text{ mM}^{-1} \text{ s}^{-1}$ at 1.5 T, 2–3 times greater than conventional

AI System to Automatically Review and Summarize Research Papers

Intelligent AI-powered academic analysis platform

Upload second paper

Drag and drop file here
Limit 200MB per file • PDF

Browse files

pubs.pdf 11.7MB

Paper A

Experimental details, kinetics analysis details, and photophysical properties of pyrene and TCBN (PDF) ■ AUTHOR INFORMATION Corresponding Authors Jianlei Han – College of Biological and Chemical Engineering, Jiaxing University, Jiaxing 314001, China; orcid.org/0000-0001-6566-7621; Email: hanjianlei@zjxu.edu.cn Pengfei Duan – Laboratory of Nanosystem and Hierarchical Fabrication, National Center for Nanoscience and Technology, Beijing 100190, China; University of Chinese Academy of Sciences, Beijing 101408, China; orcid.org/0000-0002-5971-7546; Email: duanpf@nanoctr.cn Zihao Xu – Beijing National Laboratory for Molecular Sciences, Huairou Research Center, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China; orcid.org/0000-0003-0805-8533; Email: zihaox@iccas.ac.cn Authors Zhiyong Bai – Beijing National Laboratory for Molecular Sciences, Huairou Research Center, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China; Jiao Mu – Beijing National Laboratory for Molecular Sciences, Huairou Research Center, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China Xue Jin – Laboratory of Nanosystem and Hierarchical Fabrication, National Center for Nanoscience and Technology, Beijing 100190, China; orcid.org/0009-0001-9921-0176 Tonghan Zhao – Laboratory of Nanosystem and Hierarchical Fabrication, National Center for Nanoscience and Technology, Beijing 100190, China Yonghong Shi – Xi'an Rare Metal Materials Institute Co., Ltd., Northwest Institute for Non-ferrous Metal Research, Xi'an 710016, China Complete contact information is available at: <https://pubs.acs.org/10.1021/jacs.5c17410> Notes The authors declare no competing financial interest. ■ ACKNOWLEDGMENTS This work was supported by National Natural Science Foundation of China (22588301, 22405215, 22302046, 22205045, 22172041, 52173159, 92356307, and 22403097), the National Key Basic R&D Research Program of Ministry of Science and Technology of the People's Republic of China (2021YFA1200303), and the Strategic Priority Research Program of the Chinese Academy of Sciences (XDB0960000, XDB0960200, XDB0960201). Although upconversion quantum yield could not be determined due to challenges in quantifying absorbed photons, these results, to the best of our knowledge, provide the first experimental demonstration of CT exciton utilization in TTA-UC systems and establish a viable pathway for heavy atom-free triplet sensitizer development. In addition to the conventional spin-orbit coupling mediated ISC mechanism, two alternative pathways for triplet state generation have been identified in organic donor-acceptor systems: 16 radical pair intersystem crossing (RP-ISC) 17 and spin-orbit charge transfer intersystem crossing (SOCT-ISC). To experimentally validate CT exciton-mediated

Paper B

One recent study which reduces particle size to MRI-relevant dimensions and relates the structure-MRI-property relationships of confined particles is by Gao et al., who utilized double emulsions generated through the combined effect of self-emulsification and phase separation of a water-dichloro-methane-hydrophobic iron oxide system to confine the self-assembly of magnetic nanoparticles (MNP), resulting in the preparation of hierarchically structured magnetic single-hole hollow spheres (MSHS) (Figure 2a,b). While the importance of optimizing various factors for a singular CA is key in the design of new high relaxivity CAs (considering water exchange, tumbling rate, electron spin relaxation, and other parameters for small-molecule CAs; and the influence of size, shape, crystallinity, surface modification, or element doping for magnetic inorganic nanoparticles), we have intentionally limited discussion of these aspects, as they have been extensively covered in prior reviews.¹⁸⁷ Recent advances in ligand architecture demonstrate progress toward closing this gap; for example, Botta and colleagues engineered α -aryl substituted Gd-DOTA chelates with relaxivities of $11.7 \text{ mM}^{-1} \text{ s}^{-1}$ at 1.5 T, 2–3 times greater than conventional agents, with values increasing to $110 \pm 5 \text{ mM}^{-1} \text{ s}^{-1}$ upon binding to human serum albumin, nearing theoretical limits for optimized molecular and protein-bound systems. Although signaling ion- and molecule-responsive self-assembling MRI probes are still at an early stage and face challenges in biocompatibility, assembly stability, and signal specificity under physiological conditions, ongoing advances in contrast agent design and the integration of responsive elements are expected to accelerate their clinical translation, ultimately enabling earlier and more accurate detection of disease-related signaling changes. The resulting 100 nm nanoparticles exhibited enhanced r_2 contrast ($13.6 \text{ mM}^{-1} \text{ s}^{-1}$ at 7.0 T) compared to individual monomers, which was attributed in the original report to increased effective magnetization and slower tumbling of the nanostructures, although this was not directly proved and care needs to be taken in this interpretation due to the physiological measurement conditions limiting the potential to reach saturation.

AI System to Automatically Review and Summarize Research Papers

localhost:8501

Navigation

- Upload Paper
- Paper Summary
- Detailed Review
- Insights
- Visual Analytics
- Paper Comparison
- Export & Explainability

Deploy :

AI System to Automatically Review and Summarize Research Papers

Intelligent AI-powered academic analysis platform

Download AI Review

Explainability

TF-IDF is used to score sentence importance based on term relevance and frequency, enabling transparent and interpretable summaries.

The screenshot shows a dark-themed web application interface. On the left, there's a vertical sidebar with a grid of icons and a list of navigation items: Navigation, Upload Paper, Paper Summary, Detailed Review, Insights, Visual Analytics, Paper Comparison, Export & Explainability, and a plus sign icon. At the top right, there are standard browser controls (minimize, maximize, close) and a Chat icon. The main content area has a large title "AI System to Automatically Review and Summarize Research Papers" in bold purple text, followed by a subtitle "Intelligent AI-powered academic analysis platform". Below the title is a button labeled "Download AI Review". A blue callout box contains the word "Explainability" with a small icon and a descriptive text: "TF-IDF is used to score sentence importance based on term relevance and frequency, enabling transparent and interpretable summaries." There are also three small icons at the top center: a document, a speech bubble, and a bar chart.