



## Tetrahedron Vol. 69, Issue 23, 2013

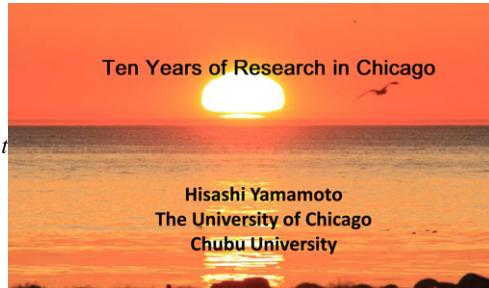
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## PERSPECTIVES

## Ten years of research in Chicago

Hisashi Yamamoto

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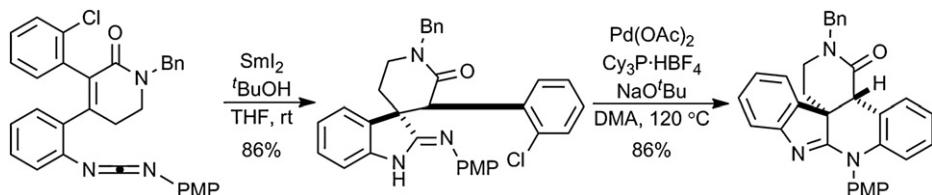


## ARTICLES

## Synthetic study of perophoramidine: construction of pentacyclic core structure via SmI2-mediated reductive cyclization

Takayuki Ishida, Yoshiji Takemoto\*

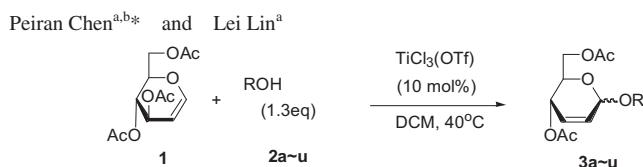
pp 4517–4523



**An efficient procedure for the synthesis of 2,3-unsaturated-O-glycosides:  $TiCl_3(OTf)$  as the catalyst for type I Ferrier rearrangement**

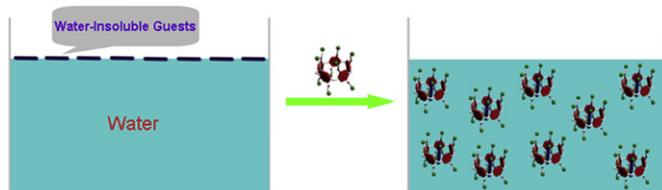
pp 4524–4531

Peiran Chen\*, Lei Lin

Twenty-one examples. Yield upto 90%. Anomeric selectivity:  $\alpha:\beta$  2/1–100/0.
**Neutral guest capture by a cationic water-soluble pillar[5]arene in water**

pp 4532–4535

Yingjie Ma, Min Xue, Zibin Zhang, Xiaodong Chi, Feihe Huang\*

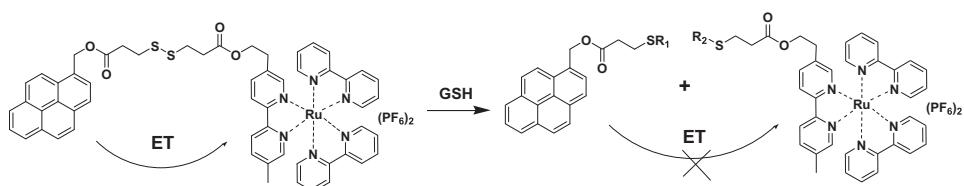


A cationic water-soluble pillar[5]arene offering a well-defined cavity with hydrophobic inner surface can capture neutral guests, even water-insoluble guests, into its cavity via hydrophobic forces. The binding ability depends upon guest hydrophobicity. The higher guest hydrophobicity contributes to the higher host affinity. Methanol and ethanol do not show any affinity for the host at all, because they are too hydrophilic for the host to compete with water.


**Thiol-selective sensor based on intramolecular energy transfer between a bichromophoric system**

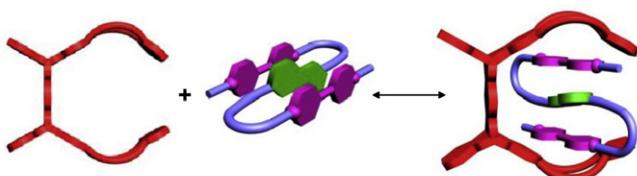
pp 4536–4540

Zhiyuan Fan, Jiasheng Wu\*, Weimin Liu, Jingjin Ma, Jiayu Sun, Pengfei Wang


**Ion-controlled switchable complexation between pentiptycene-based tweezer-like hosts and self-folding guests**

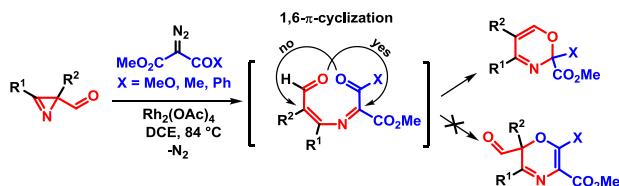
pp 4541–4545

Ying Han, Jia-Bin Guo, Jing Cao, Chuan-Feng Chen\*



**Rh<sub>2</sub>(OAc)<sub>4</sub>-catalyzed reaction of  $\alpha$ -diazocarbonyl compounds with 2-carbonyl-substituted 2*H*-azirines**  
Kirill V. Zavyalov, Mikail S. Novikov\*, Alexander F. Khlebnikov, Dmitry S. Yufit

pp 4546–4551



**Heck reaction of *ortho*-substituted iodobenzenes with  $\alpha,\beta$ -unsaturated nitriles as a key step in the synthesis of tetrahydro-2-benzazepines and hexahydro-3-benzazocines**

Peer Hasebein, Katharina Aulinger, Dirk Schepmann, Bernhard Wünsch\*

pp 4552–4562

The reaction scheme shows the Heck reaction of *ortho*-substituted iodobenzenes with  $\alpha,\beta$ -unsaturated nitriles (R<sup>1</sup>-C(=O)-CH=CH-CN) to form tetrahydro-2-benzazepines and hexahydro-3-benzazocines. The starting material is an iodobenzene substituted with two methoxy groups (-OCH<sub>3</sub>) at the *ortho* position. The product is a substituted benzene ring with a methoxy group at the *ortho* position and a cyano group (-CN) at the  $\beta$ -position. The final products are formed by further cyclization.

**Total syntheses of the dipyrrolobenzoquinone (+)-terreusinone enabled by an evaluation of 4-methylpent-1-yn-3-ols in the Larock indole synthesis**

Christy Wang, Jonathan Sperry\*

pp 4563–4577

The reaction scheme details the total synthesis of (+)-terreusinone. It begins with a cross-coupling reaction under 'Larock indolization' conditions between a bromophenyl amine and a 4-methylpent-1-yn-3-ol derivative (96% ee). This is followed by a 5-endo-dig cyclization to form an indole intermediate (>95% ee). The final product is (+)-terreusinone, a complex polycyclic dipyrrolobenzoquinone.

**Colorimetric macrocyclic anion probes bearing nitrophenylurea and nitrophenylthiourea binding groups**

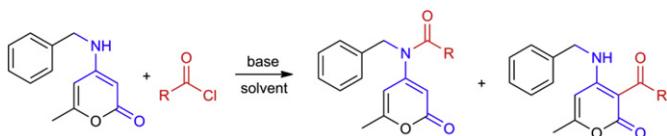
Anxela Aldrey, Verónica García, Carlos Lodeiro\*, Alejandro Macías, Paulo Pérez-Lourido, Laura Valencia, Rufina Bastida\*, Cristina Núñez\*

pp 4578–4585

The reaction scheme shows the synthesis of macrocyclic anion probes 1 and 2. It starts with a bis(urethane) derivative, which is reduced with NaBH<sub>4</sub> to form a bis(amine). This is then coupled with Br-C(=O)-Et<sub>2</sub> and NH<sub>2</sub>-NH<sub>2</sub> to form the macrocycle. Probe 1 is formed with X=O, and probe 2 with X=S. The structures of 1 and 2 are shown, along with their UV-vis spectra and color changes in various solvents (H<sub>2</sub>O, EtOH, THF, CHCl<sub>3</sub>, CH<sub>2</sub>Cl<sub>2</sub>, MeOH, H<sub>2</sub>O<sub>2</sub>, H<sub>2</sub>O<sub>2</sub>/CH<sub>2</sub>Cl<sub>2</sub>). The UV-vis spectra show absorbance peaks around 350 nm and 450 nm, with fluorescence peaks around 480 nm and 520 nm.

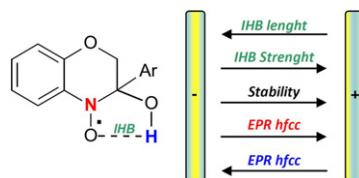
**A study on the regioselectivity in N,C-acylation of  $\beta$ -enamino-esters**  
Andrea Defant, Ines Mancini\*

pp 4586–4590



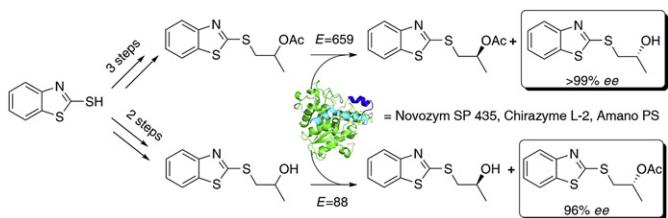
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Pierluigi Stipa

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**Lipase-catalyzed kinetic resolution of 1-(1,3-benzothiazol-2-ylsulfanyl)propan-2-ol with antifungal activity: a comparative study of transesterification versus hydrolysis**  
Paweł Borowiecki, Marcin Fabisiak, Zbigniew Ochal\*

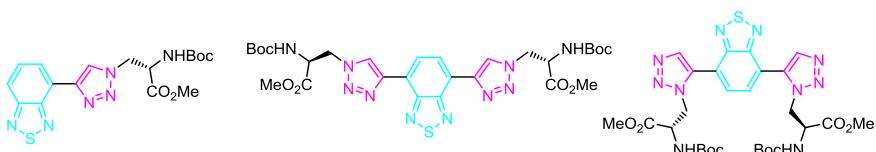
pp 4597–4602



**Triazolyl benzothiadiazole fluorescent chemosensors: a systematic investigation of 1,4- or 1,5-disubstituted mono- and bis-triazole derivatives**

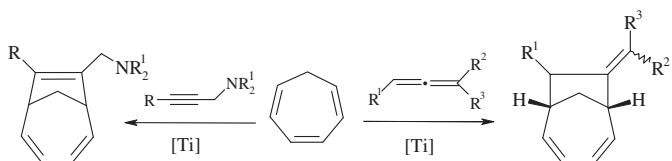
pp 4603–4608

Yi-Bin Ruan, Yanhua Yu, Chun Li, Nicolas Bogliotti, Jie Tang, Juan Xie\*



**Catalytic  $[6\pi+2\pi]$ -cycloaddition of alkynes, 1,2- and 1,3-dienes to 1,3,5-cycloheptatrienes involving Ti complexes**  
Usein M. Dzhemilev, Gulnara N. Kadikova, Dmitry I. Kolokol'tsev, Vladimir A. D'yakonov\*

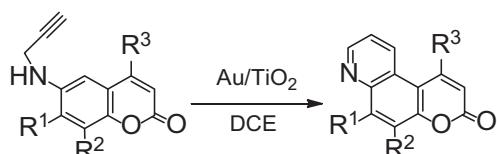
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**Synthesis of quinolines and fused pyridocoumarins from *N*-propargylanilines or propargylaminocoumarins by catalysis with gold nanoparticles supported on  $TiO_2$**

pp 4612–4616

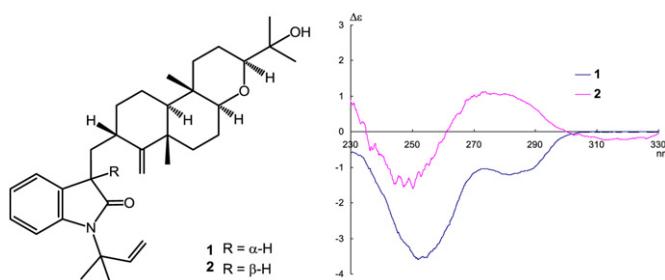
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**Anthcolorins A–F, novel cytotoxic metabolites from a sea urchin-derived *Aspergillus versicolor***

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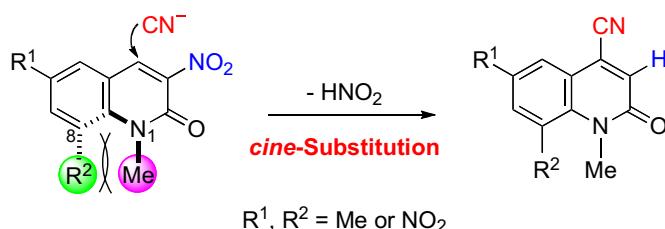
Kyoko Nakanishi, Mitsunobu Doi, Yoshihide Usami, Taro Amagata, Katsuhiko Minoura, Reiko Tanaka, Atsushi Numata, Takeshi Yamada\*



**Reactive 2-quinolones dearomatized by steric repulsion between 1-methyl and 8-substituted groups**

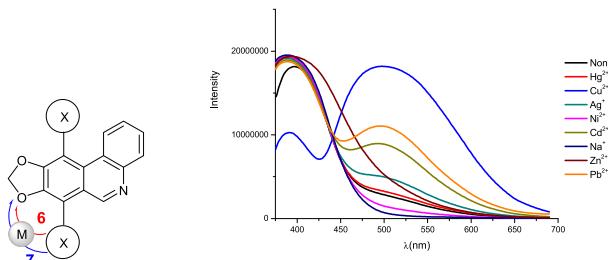
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Xin Chen, Kazuya Kobiro, Haruyasu Asahara, Kiyomi Kakiuchi, Ryuichi Sugimoto, Kazuhiko Saigo, Nagatoshi Nishiwaki\*



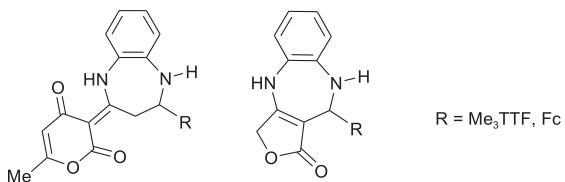
**Fluorescence sensing of Cu(II) based on trisphaeridine derivatives**  
Alegria Caballero, Pedro J. Campos, Miguel A. Rodriguez\*

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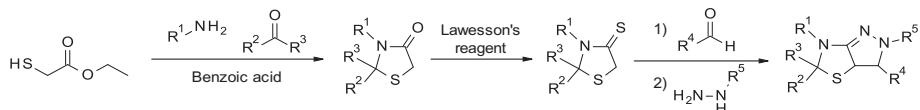
**Electroactive 1,5-benzodiazepines bearing either a tetrathiafulvalene or a ferrocene moiety**  
Rachedine Kaoua, Bellara Nedjar-Kolli\*, Thierry Roisnel, Yann Le Gal, Dominique Lorcy\*

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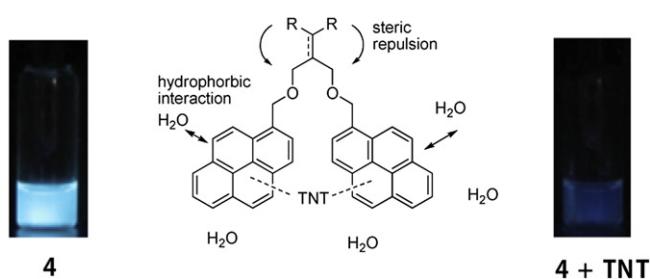
**A general synthesis of tetrahydropyrazolo[3,4-d]thiazoles**  
Sophie Pelletier, Benjamin Pinson, Tomas Smejkal, Clemens Lamberth\*

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**Simple fluorescent chemosensors for TNT: one-step synthesis**  
Seul-Bi Kim, Eun-Bee Lee, Jung-Hwa Choi, Dong-Gyu Cho\*

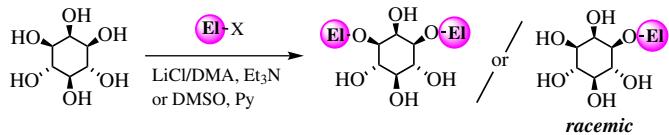
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**Regioselective functionalization of unprotected *myo*-inositol by electrophilic substitution**

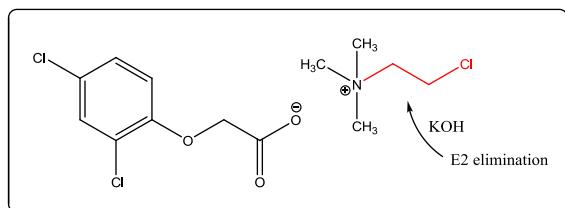
pp 4657–4664

Yutaka Watanabe\*, Tsuyoshi Uemura, Satoe Yamauchi, Kousei Tomita, Takafumi Saeki, Ryousuke Ishida, Minoru Hayashi

El–X: carboxylic chlorides and anhydrides, sulfonyl chlorides,  $\text{Ph}_2\text{P}(\text{O})-\text{Cl}$ ,  $(n\text{-BuO})_2\text{P}(\text{O})-\text{Cl}$ , chlorosilanes.**Ionic liquids as herbicides and plant growth regulators**

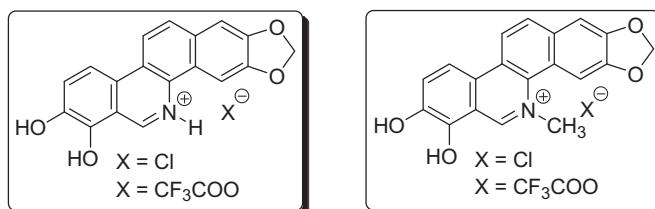
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Juliusz Pernak\*, Michał Niemczak, Katarzyna Materna, Katarzyna Marcinkowska, Tadeusz Praczyk

**Synthesis of oxidative dihydroxy metabolites of benzo[c]phenanthridines**

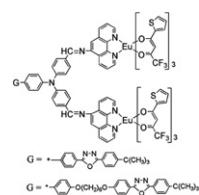
pp 4670–4678

Jakub Stýskala, Jan Hlaváč, Petr Cankar\*

**Conjugated and nonconjugated bipolar-transporting dinuclear europium(III) complexes involving triphenylamine and oxadiazole units: synthesis, photophysical and electroluminescent properties**

pp 4679–4686

Yu Liu\*, Kai Chen, Kongqiang Xing, Yafei Wang, Haigang Jiang, Xiangping Deng, Meixiang Zhu, Weigu Zhu\*

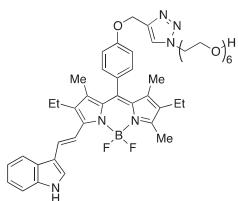


Two novel bipolar-transporting dinuclear europium(III) complexes incorporating triphenylamine and oxadiazole units simultaneously into the dual phenanthroline ligands were successfully obtained by conjugated or unconjugated linkage, respectively. Both dinuclear europium(III) complexes exhibit good thermal stability and high emission quantum yield. A sharp red emission at 616 nm with a maximum brightness of  $296.3 \text{ cd/m}^2$  at 8.5 V was achieved in the dinuclear europium(III) complexes-doped devices using a blend of PVK–PBD as a host matrix.



**Synthesis and cellular properties of Near-IR BODIPY–PEG and carbohydrate conjugates**  
Timsy Uppal, N.V.S. Dinesh K. Bhupathiraju, M. Graça H. Vicente\*

pp 4687–4693

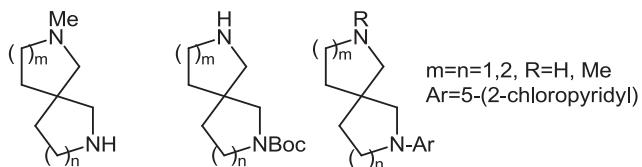


A series of novel BODIPY conjugates, containing either one or two indolylstyryl moieties and a PEG or carbohydrate group were synthesized and investigated. The conjugates show near-IR emissions (642–732 nm), quantum yields in the range 0.24–0.56, no cytotoxicity and high cellular permeability in human carcinoma HEp2 cells.



**Synthesis and differential functionalisation of pyrrolidine and piperidine based spirodiamine scaffolds**  
Kamil Weinberg, Axel Stoit, Chris G. Kruse, Mairi F. Haddow, Timothy Gallagher\*

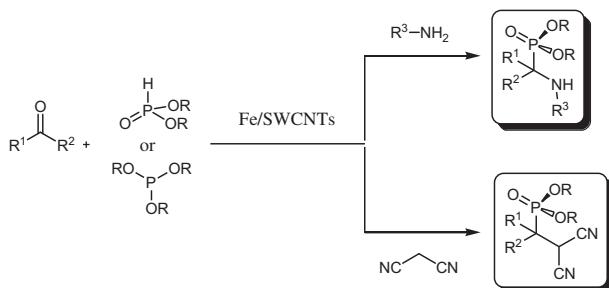
pp 4694–4707



**Iron-doped single walled carbon nanotubes as an efficient and reusable heterogeneous catalyst for the synthesis of organophosphorus compounds under solvent-free conditions**

pp 4708–4724

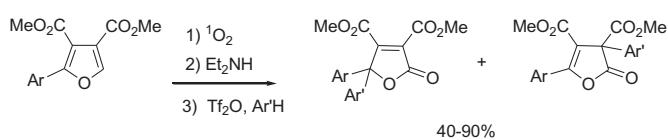
Hashem Sharghi\*, Sakineh Ebrahimpourmoghaddam, Mohammad Mahdi Doroodmand



**A mild approach to diarylfuranones via functionalized 2-arylfurans**

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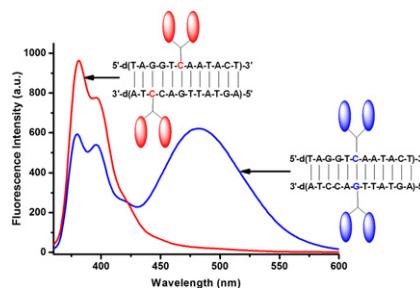
Marina DellaGreca\*, Simona Zuppolini, Armando Zarrelli, Maria R. Iesce, Lucio Previtera



**Pyrene and bis-pyrene DNA nucleobase conjugates: excimer and monomer fluorescence of linear and dendronized cytosine and 7-deazaguanine click adducts**

Hui Mei, Sachin A. Ingale, Frank Seela\*

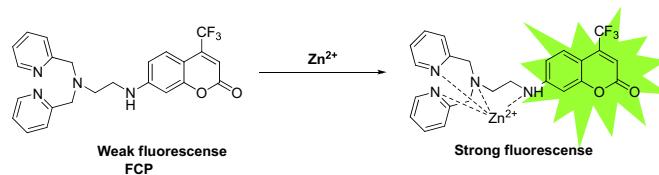
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**Coumarin-based novel fluorescent zinc ion probe in aqueous solution**

Jun Li, Chun-Fang Zhang, Ze-Zhong Ming, Ge-Fei Hao, Wen-Chao Yang\*, Guang-Fu Yang\*

pp 4743–4748



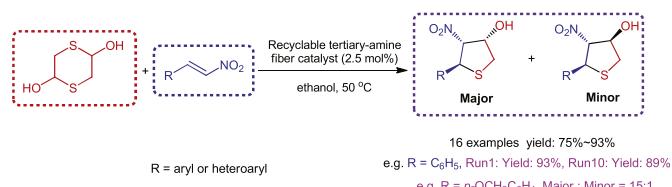
A novel water-soluble  $Zn^{2+}$  fluorescent probe, **FCP**, was designed by hybrid coumarin and di-2-picolyamine. **FCP** displayed excellent cell permeability in HeLa cell model and very low cytotoxicity to HEK-293 cells.



**Tertiary amine functionalized polyacrylonitrile fiber catalyst for the synthesis of tetrahydrothiophenes**

Changzhu Xu, Jianguo Du, Lichao Ma, Guowei Li, Minli Tao\*, Wenqin Zhang

pp 4749–4757



\*Corresponding author

 <sup>†</sup>Supplementary data available via SciVerse ScienceDirect

**COVER**

Based on the picture of Nagoya castle by Dr. Kunio Suzuki. © 2013 H. Yamamoto

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