

Graphical Abstracts/Chin Chem Lett 26 (2015) iii-viii

Special column “2D correlation spectroscopy”: Review

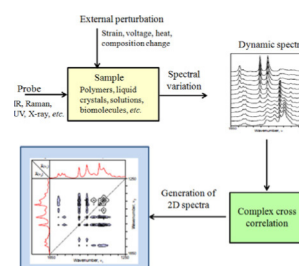
Recent developments in two-dimensional (2D) correlation spectroscopy

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Recent noteworthy developments in the field of two-dimensional (2D) correlation spectroscopy are reviewed.

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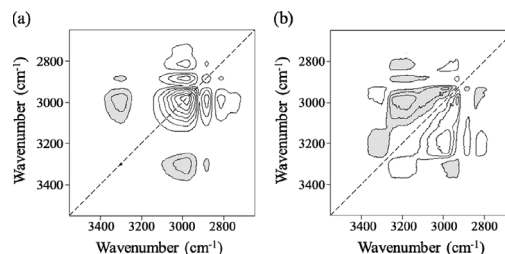
Special column “2D correlation spectroscopy”: Original articles

pH-induced structural changes of surface immobilized poly (L-lysine) by two-dimensional (2D) infrared correlation study

Eun Joo Yoo^a, Boknam Chae^b, Young Mee Jung^c, Seung Woo Lee^a^aSchool of Chemical Engineering, Yeungnam University, Gyeongsan 712-749, Republic of Korea^bPohang Accelerator Laboratory, Pohang 790-784, Republic of Korea^cDepartment of Chemistry, Kangwon National University, Chunchon 200-701, Republic of Korea

pH-induced structural changes have been examined by 2D correlation analysis. The decrease of protonation induced the spectral changes of alkyl group.

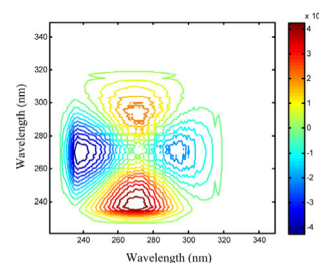
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Two-dimensional correlation spectroscopic studies on coordination between carbonyl group of butanone and metal ions

Dan-Qing Gao^{a,b}, Xiao-Pei Li^{b,c}, Jia-Jia Shi^{b,d}, Xiao-Yan Kang^{a,b}, Ting-Guo Kang^a, Jin-Ming Xia^e, Xiao-Feng Ling^f, Shi-Fu Weng^b, Yi-Zhuang Xu^{b,g}, Isao Noda^{b,h}, Jin-Guang Wu^b^aSchool of Postgraduate, Liaoning University of Traditional Chinese Medicine, Shenyang 11660, China^bCollege of Chemistry and Molecular Engineering, Peking University, Beijing 100871, China^cInstitute of Process Engineering and Chinese Academy of Sciences, Beijing 100190, China^dCollege of Chemistry and Materials, Hebei Normal University, Shijiazhuang 050016, China^eTwo Five Eight Health Technology Co., Ltd, Beijing 100045, China^fThe Third School of Clinical Medicine of Peking University, Beijing 100083, China^gNinghai Doubly Advanced Material Co., Ltd, Ninghai 315602, China^hDepartment of Materials Science and Engineering, University of Delaware, Newark, DE 19716, USAMetal ions show considerable ability to coordinate with the carbonyl group of butanone and bring about spectral variation of the $n-\pi^*$ transition band, which is manifested by cross peaks in 2D asynchronous spectra.

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Interactions between pyridinium and Nd³⁺

Yu-Hai Liu^a, Jia-Jia Shi^{a,b}, Dan-Qing Gao^{a,c}, Yun-Long Gao^{a,c}, Ran Guo^a, Xiao-Feng Ling^d, Shi-Fu Weng^a, Yi-Zhuang Xu^{a,e}, Isao Noda^{a,f}, Jin-Guang Wu^a

^aCollege of Chemistry and Molecular Engineering, Peking University, Beijing 100871, China

^bCollege of Chemistry and Materials, Hebei Normal University, Shijiazhuang 050016, China

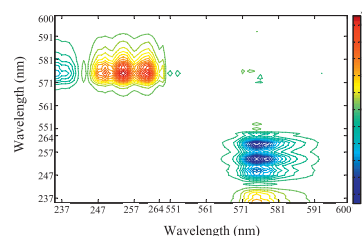
^cSchool of Postgraduate, Liaoning University of Traditional Chinese Medicine, Shenyang 11660, China

^dThe third school of Clinical Medicine of Peking University, Beijing, 100083, China

^eNinhai Doubly Advanced Martial Co., Ltd., Ninhai 315602, China

^fDepartment of Materials Science and Engineering, University of Delaware, Newark, DE 19716, USA

A series of cross peaks in the resultant DAOSD spectrum confirms the occurrence of intermolecular interaction between Nd³⁺ and pyridinium. However, no coordination occurs between Nd³⁺ and pyridinium. Interaction between π electron from aromatic system and f electron from lanthanide ions account for the appearance of cross peaks in 2D asynchronous spectra.



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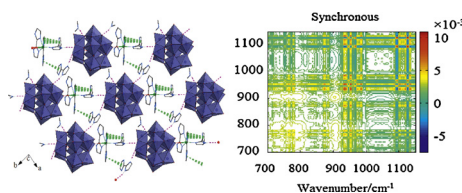
Synthesis and characterization of a new catalyst for RhB degradation constructed by [SiMo₁₂O₄₀]⁴⁻ anionic cluster

Hao Wang^a, Yi-Ping Chen^{a,b}, Zhu-Chai You^a, Meng-Xi Zhou^a, Ning Zhang^a, Yan-Qiong Sun^a

^aCollege of Chemistry, Fuzhou University, Fuzhou 350108, China

^bState Key Laboratory of Structural Chemistry, Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou 350002, China

A new Keggin-type polyoxomolybdate [H₂biim]{Ni(biim)₃(SiMo₁₂O₄₀)} has been prepared by hydrothermal condition. 2D-IR COS has been conducted in order to summarize spectra rules. Meanwhile, photocatalytic degradation of rhodamine B dye has been also studied.



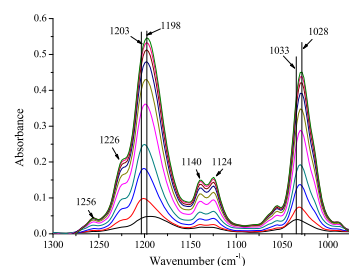
Two-dimensional correlation analysis of continuous online *in situ* ATR-FTIR on the adsorption of butyl xanthate at the surface of α -PbO

Qi Shen, Ying-Ju Fan, Wei-Min Zhang, Bo-Li Zhu, Ru Wang, Zhong-Xi Sun

School of Chemistry and Chemical Engineering, University of Ji'nan, Ji'nan 250022, China

The appearance of spectral peaks at 1203 cm⁻¹, 1033 cm⁻¹ and their red shift indicated the formation and aggregation of xanthate at the surface of α -PbO.

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Investigation on structural changes of isotactic polypropylene mesophase in the heating process by using two-dimensional infrared correlation spectroscopy

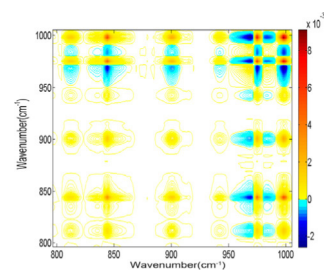
Qian-Hong Jiang^a, Chun-Bo Zhang^a, Jian Yang^a, Ying Zhao^a, Yi-Zhuang Xu^b, Du-Jin Wang^a

^aBeijing National Laboratory for Molecular Sciences, Key Laboratory of Engineering Plastics, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

^bCollege of Chemistry and Molecular Engineering, Peking University, Beijing 100871, China

Synchronous two-dimensional (2D) infrared correlation spectrum of quenched iPP in the range of 1000–800 cm⁻¹.

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