

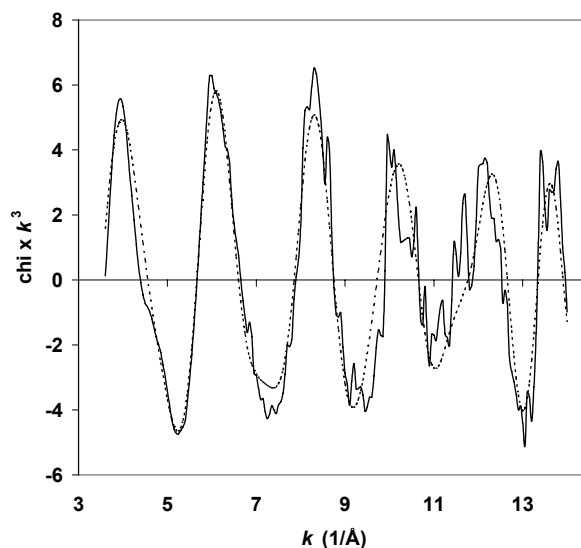
Supplementary Material (ESI) for Chemical Communications  
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## **Supplementary Information**

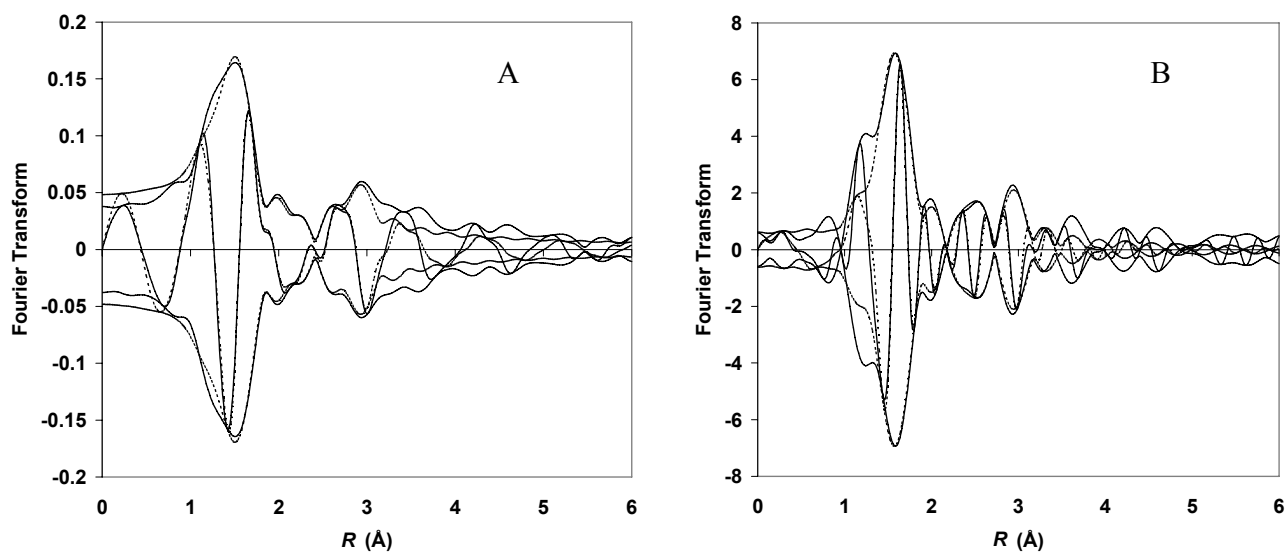
### **Silica-Supported Tantalum Clusters: Catalyst for Alkane Conversion**

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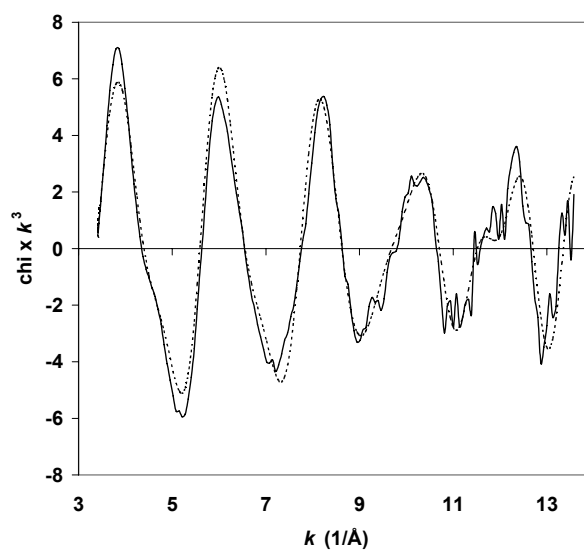
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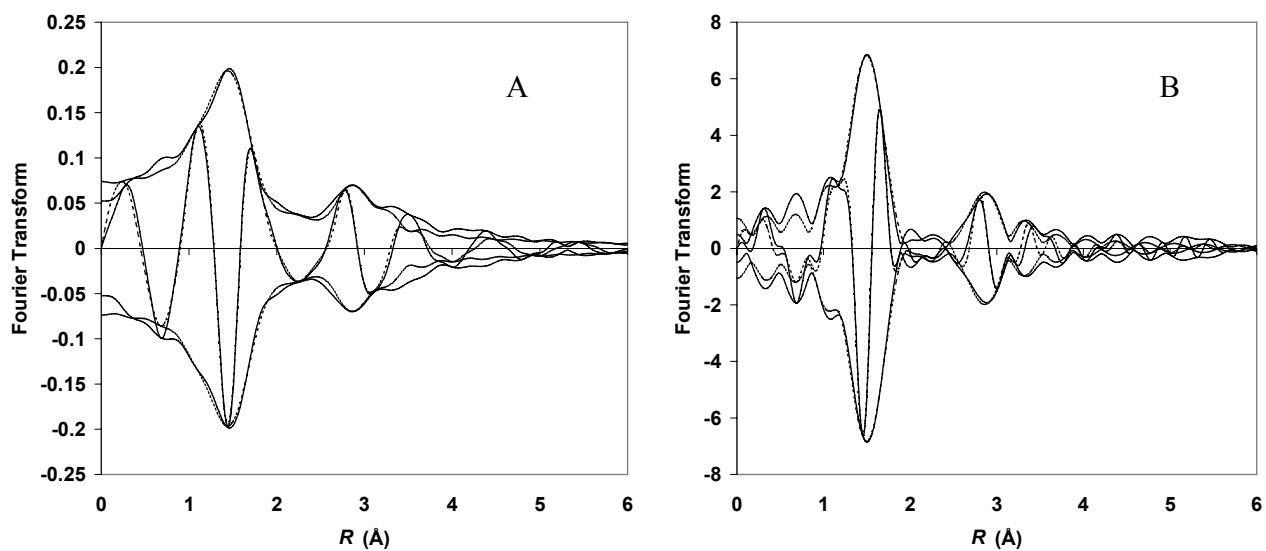
**Supplementary Fig. 1.** EXAFS  $k^3$ -weighted spectrum of the sample treated in flowing  $H_2$  at 523 K (solid line) and the fit (dotted line).



**Supplementary Fig. 2.** Fourier transform of the EXAFS spectrum of the sample treated in flowing  $H_2$  at 523 K (solid line) and the fit (dotted line). Panel A is the  $k^1$ -weighted Fourier Transform; panel B is the  $k^3$ -weighted Fourier transform.



**Supplementary Fig. 3.** EXAFS  $k^3$ -weighted spectrum of the sample treated in ethane at 523 K (solid line) and the fit (dotted line).



**Supplementary Fig. 4.** Fourier transform of the EXAFS spectrum of the sample treated in ethane at 523 K (solid line) and the fit (dotted line). Panel A is the  $k^1$ -weighted Fourier Transform; panel B is the  $k^3$ -weighted Fourier transform.