## **Supplemental Material**

A. Fourier transformed (a) and  $k^3$ -weighted W L<sub>III</sub>-edge EXAFS function  $(k^3 \cdot \chi(k))$  (b) of the Ni-WO<sub>3</sub>/Al<sub>2</sub>O<sub>3</sub>-F catalyst sulfided at 400°C. Measured data — and curve fitting results ---.

**B.** Fourier transformed (a) and  $k^3$ -weighted W L<sub>III</sub>-edge EXAFS function  $(k^3 \cdot \chi(k))$  (b) of the Ni-ATT/Al<sub>2</sub>O<sub>3</sub> catalyst sulfided at 400°C. Measured data — and curve fitting results ---.

C. Fourier transformed (a) and  $k^3$ -weighted W L<sub>III</sub>-edge EXAFS function  $(k^3 \cdot \chi(k))$  (b) of the Ni-ATT/Al<sub>2</sub>O<sub>3</sub>-F catalyst sulfided at 400°C. Measured data —— and curve fitting results ---.

**D.** Fourier transformed (a) and  $k^3$ -weighted Ni K-edge EXAFS function  $(k^3 \cdot \chi(k))$  (b) of the Ni-WO<sub>3</sub>/Al<sub>2</sub>O<sub>3</sub>-F catalyst sulfided at 400°C. Measured data —— and curve fitting results ---.

**E.** Fourier transformed (a) and  $k^3$ -weighted Ni K-edge EXAFS function  $(k^3 \cdot \chi(k))$  (b) of the Ni-ATT/Al<sub>2</sub>O<sub>3</sub>-F catalyst sulfided at 400°C. Measured data —— and curve fitting results ---.

**F.** Fourier transformed (a) and  $k^3$ - weighted W L<sub>III</sub>-edge EXAFS function  $(k^3 \cdot \chi(k))$  (b) of the Ni-WO<sub>3</sub>/Al<sub>2</sub>O<sub>3</sub> (RT) catalyst sulfided at 400°C. Measured data — and curve fitting results ---.

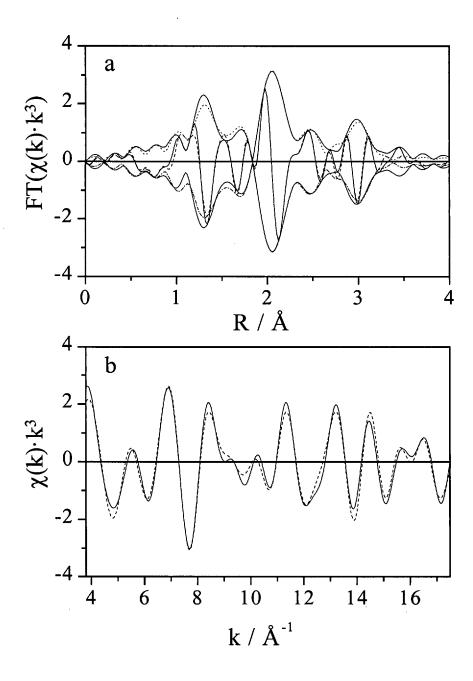


Figure A

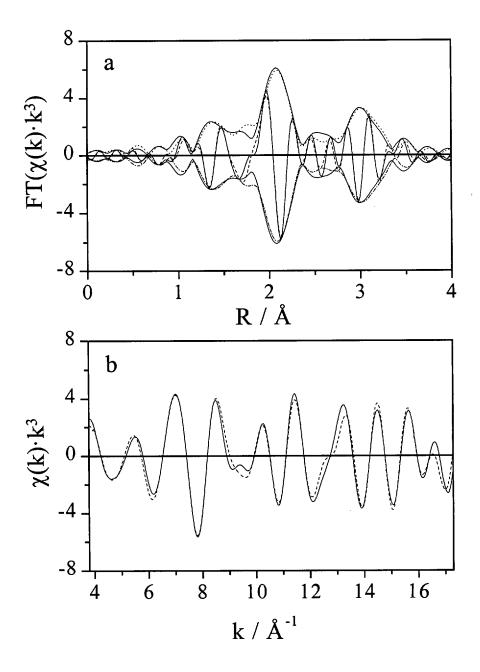


Figure B

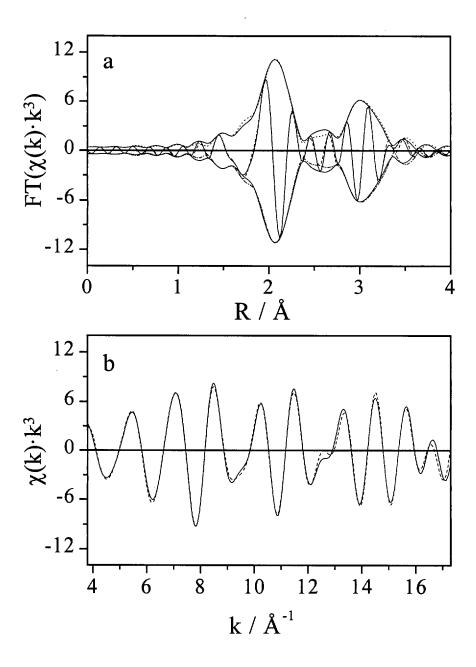


Figure C

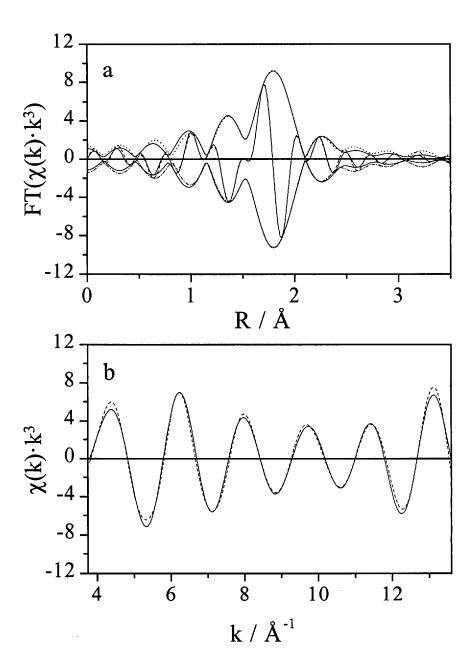


Figure D

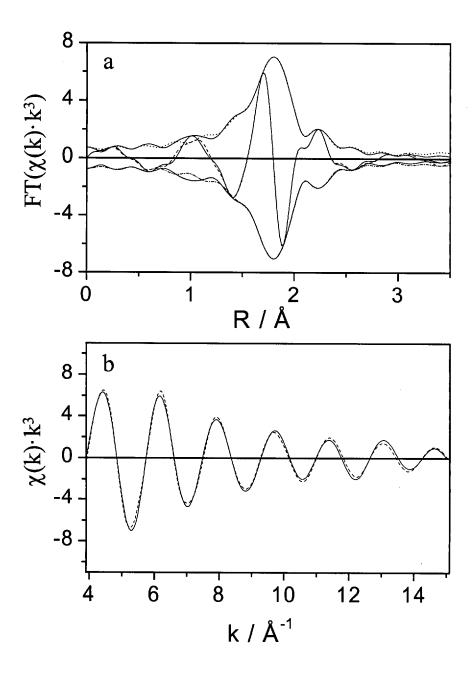


Figure E

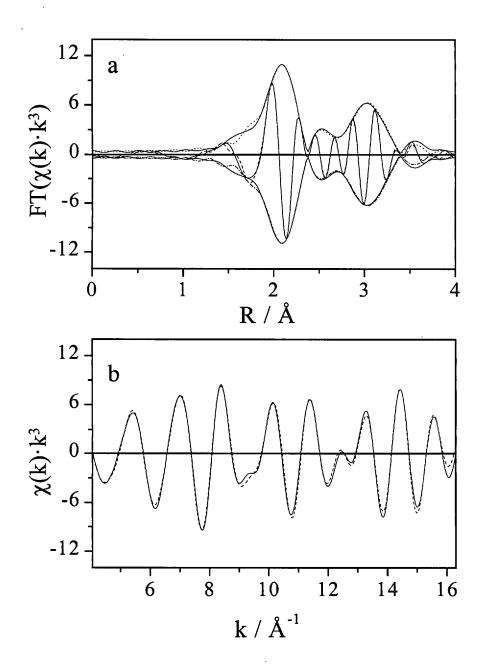


Figure F