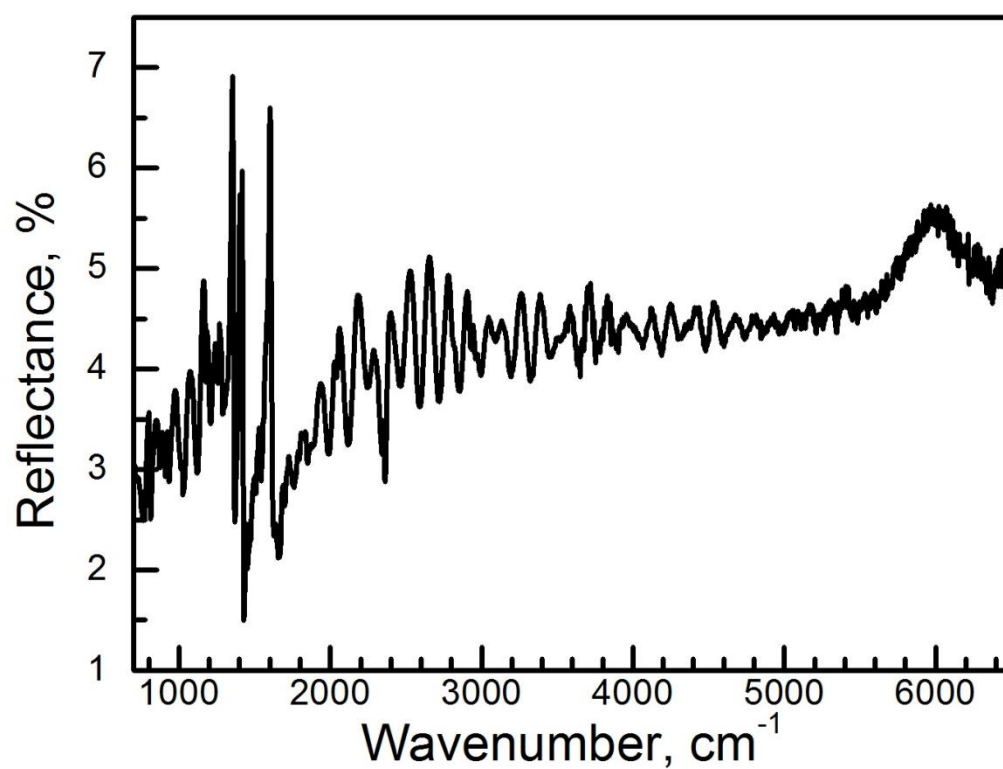


Electronic Supporting information for “[BEDT-TTF][Fe(C<sub>2</sub>O<sub>4</sub>)Cl<sub>2</sub>]: An Organic-Inorganic Hybrid  
Semiconductive Antiferromagnet” by Zhang et al



**Figure S1.** IR spectrum of **1** on the best developed surface of single crystal at room-temperature  
at Bio-rad FTS6000/UMA500 microscopy.

Table S1. Magnetic Properties of  $[\text{Fe}(\text{C}_2\text{O}_4)\text{Cl}_2]_n$  salts

| Cation                                     | Broad peak, K | $\chi T_{\text{rt}}$ , $\text{cm}^3\text{Kmol}^{-1}$ | $T_{\text{N}}$ , K | C, $\text{cm}^3\text{mol}^{-1}$ | $\theta$ , K | J, $\text{cm}^{-1}$ | g     | ref |
|--------------------------------------------|---------------|------------------------------------------------------|--------------------|---------------------------------|--------------|---------------------|-------|-----|
| $(\text{CH}_3)_2\text{NH}_2^+$             | 49            | 3.45                                                 |                    | 5.35                            | -139.3       | -4.39               | 1.98  | 12b |
| $(\text{CH}_3)_3\text{NH}^+$               | 40            | 3.45                                                 |                    | 4.09                            | -114         | -3.95               | 1.77  | 12b |
| $(\text{CH}_3)_4\text{N}^+$                | 48            | 3.70                                                 |                    |                                 |              |                     |       | 12b |
| $(\text{CH}_3)_4\text{N}^+$                | 48            | 3.50                                                 | 9.5                | 4.48                            | -99.7        | -3.97               | 1.95  | 12a |
| $(\text{C}_2\text{H}_5)_3\text{NH}^+$ (I)  | 40            | 3.60                                                 |                    | 4.62                            | -93.9        | -3.63               | 1.98  | 12a |
| $(\text{C}_2\text{H}_5)_3\text{NH}^+$ (II) | 50            | 3.35                                                 | 14.5               | 5.03                            | -112.0       | -4.28               | 2.06  | 12a |
| $(\text{C}_4\text{H}_9)_4\text{N}^+$       | 42            | 3.68                                                 | 3.8                | 4.84                            | -98.0        | -3.76               | 2.03  | 12a |
| TTF <sup>+</sup>                           | 55            | 5.10                                                 | 19.8               | 4.83                            | -21.4        | -5.10               | 2.0   | 8a  |
| BETS <sup>+0.5</sup>                       | 50            | 4.83                                                 | 4.5                | 4.81                            | -107         | -12.5               | 2.0   | 8b  |
| BEDT-TTF <sup>+</sup>                      | 45            | 4.38                                                 |                    | 5.54                            | -74          | -3.864              | 2.0   | 8c  |
| BEDT-TTF <sup>+</sup>                      | 50            | 4.15                                                 | 5.5                | 5.95                            | -126         | -4.150              | 2.178 |     |