CLAIMS

1. A method of detecting impurities in a refrigerant utilizing a refrigerant analyzer, wherein the refrigerant analyzer includes a first sensing device in flow communication with a second sensing device, the method comprising:

(a) splitting the refrigerant into a first refrigerant stream and a second refrigerant stream and passing the first refrigerant stream through a scrubber while not passing the second refrigerant stream through the scrubber;

(b) passing the first refrigerant stream through the first sensing device to detect a first characteristic of the refrigerant of the first refrigerant stream;

(c) passing the second refrigerant stream through the first sensing device to detect a first characteristic of the refrigerant of the second refrigerant stream; and

(d) passing the second refrigerant stream through the second sensing device to detect a second characteristic of the refrigerant of the second refrigerant stream,

wherein the first sensing device comprises a non-dispersive infrared sensor and the second sensing device comprises an electrochemical sensor.

2. The method of claim 1, wherein the first characteristic comprises absorption of a wavelength of light by the refrigerant.

3. The method of any of the preceding claims, wherein the first characteristic comprises absorption of a wavelength of light by the refrigerant and the wavelength is less than or equal to 15,500 nanometers.

4. The method of any of the preceding claims, wherein the second characteristic comprises a measured concentration level based at least in part on a sensed output of the second sensing device.

5. The method of any of the preceding claims, wherein the second characteristic comprises a measured concentration level based at least in part on a sensed output and the measured concentration level is greater than or equal to 1000 ppmv.

6. The method of any of the preceding claims, further comprising:

(e) operating the refrigerant analyzer to provide an indication if it is determined that a contaminant is present.

7. A refrigerant analyzer comprising:

a scrubber;

a flow regulator operably coupled to the scrubber and a first sensing device, wherein the flow regulator is configured to create a first refrigerant stream and a second refrigerant stream;

the first sensing device, wherein the first sensing device is configured at least to determine a first characteristic of a refrigerant of the first refrigerant stream and the second refrigerant stream; and

a second sensing device in flow communication with the first sensing device, the second sensing device configured at least to determine a second characteristic of the refrigerant of the second refrigerant stream,

wherein the first refrigerant stream passes through the scrubber and the second refrigerant stream does not pass through the scrubber;

wherein the first sensing device comprises a non-dispersive infrared sensor; and

the second sensing device comprises an electrochemical sensor.

8. The refrigerant analyzer of claim 7, further comprising a processor in electrical communication with the first sensing device and the second sensing device.

9. The refrigerant analyzer of claim 7 or claim 8, wherein the first characteristic comprises absorption of a wavelength of light by the refrigerant.

10. The refrigerant analyzer of claim 9, wherein the first characteristic comprises absorption of a wavelength of light by the refrigerant and the wavelength is less than or equal to 15,500 nanometers.

11. The refrigerant analyzer of any of claims 7-10, wherein the second characteristic comprises a measured concentration level based at least in part on a sensed output of the second sensing device.

12. The refrigerant analyzer of claim 11, wherein the measured concentration level is greater than or equal to 1000 ppmv.

13. The refrigerant analyzer of any of claims 7-12, wherein the scrubber is fluidly upstream of the first sensing device, or wherein the scrubber is fluidly upstream of the second sensing device.