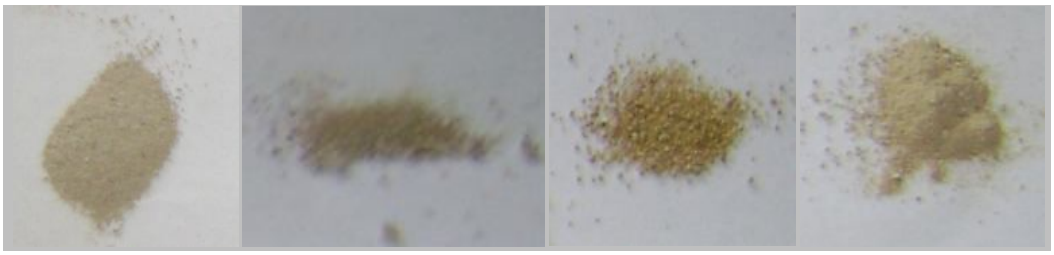
2. Experimental work

2.1 Materials

kidney stones were collected surgically from 20 patients in Sudan. the table below explains the age of patient male and female, localization, and the area location of patient.

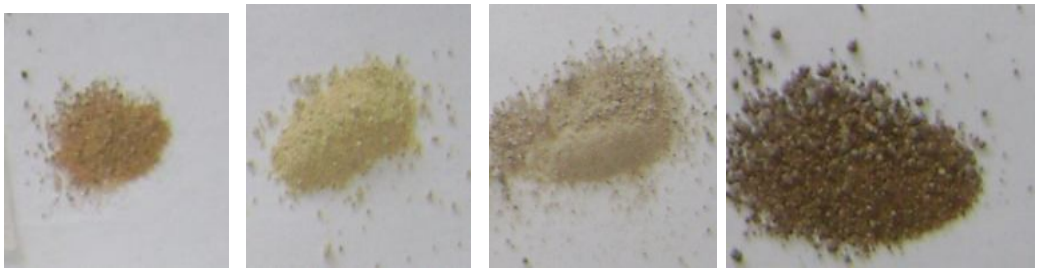
Table 2- 1: The collection of Samples

Samples	Gender	Age	Localization Of Stones	Area Location of Patien
Sample (1)	Female	4	kidney	Khartoum
Sample (2	Female	8	kidney	Khartoum
Sample (3)	Female	15	kidney	Khartoum
Sample (4)	Female	24	kidney	Madani
Sample (5)	Female	26	kidney	Khartoum
Sample (6)	Female	40	kidney	Rofaa
Sample (7)	Male	4	kidney	Khartoum
Sample (8)	Male	7	kidney	Khartoum
Sample (9)	Male	10	kidney	Khartoum
Sample (10)	Male	24	kidney	Rabak
Sample (11)	Male	25	kidney	Hasahisa
Sample (12)	Male	30	kidney	Kadogli
Sample (13)	Male	33	kidney	Atbara
Sample (14)	Male	35	kidney	Khartoum
Sample (15)	Male	35	kidney	Khartoum
Sample (16)	Male	41	kidney	Nyala
Sample (17)	Male	44	kidney	Khartoum
Sample (18)	Male	45	kidney	Abugouta
Sample (19)	Male	45	kidney	Khartoum
Sample (20)	Male	67	kidney	khartoum



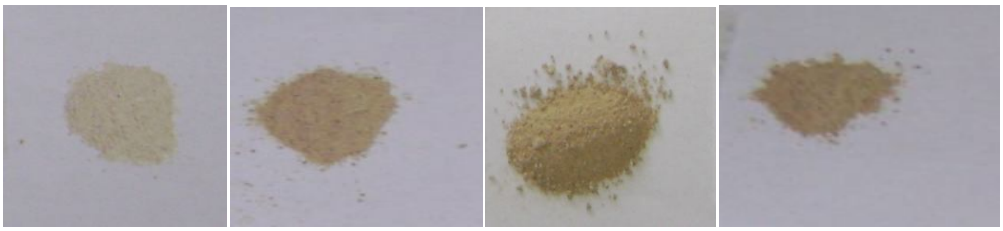
Sample (1) Sample (2) Sample (3) Sample (4)

Sample (5) Sample (6) Sample (7) Sample (8)



Sample (9) Sample (10) Sample (11) Sample (12)

Sample (13) Sample (14) Sample (15) Sample (16)



Sample (17) Sample (18) Sample (19) Sample (20)

Figure 2 – 1: The Image of collected Samples

2.2 The solubility of collection Samples

All of the samples were soluble in the Nitric acid and became colorless.

2.3 Inductively Coupled Plasma Test

2.3.1 Requirements

1 - Inductively Coupled Plasma - Optical Emission Spectrometer (ICPOES) Varian, 725-ES.

2 - Nitric acid (96-72%)

3 - Deionizer water 4- Random tap water 5- Black tea 6- Table salt.

2.3.2 Methods

Kidney stones were collected from 20 Sudanese patients, the stone were collected, washed, dried, and powdered in a mortar. sample solution was Prepared by Dissolving 50 mg of powdered stone in 40 ml of Nitric acid (HNO_3 69-72%) and diluted to 100 ml with deionized water in a volumetric flask . This solution was used to determinations the elements

Random tap water was taken from Khartoum to determine the elements. Black tea sample solution was prepared by boiling 10 mg of sample in deionized water, it was filtrated and diluted to 100 ml with deionized water in a volumetric flask. NaCl sample solution was Prepared by dissolving 10 mg of powdered sample in deionized water and diluted to 100.0 ml with deionized water in a volumetric flask. The blanks were obtained by the same analytical process that was used in the analysis of

the samples. All samples were analysed by Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES), Varian, 725-ES.

2.4 Infrared Test

2.4.1 Requirements

1 - Infrared spectrophotometer (Shimadzu -FTIR8400S).

2 – Dried potassium bromide

2.4.2 Procedure

The collected material was mixed with potassium bromide and transformed in to a transparent pellet using a mold and a special press, in preparation for measurement by FTIR.

2.5 Ultra violet Test

2.5.1 Requirements

1- Ultra violet spectrometer (1800- Shimadzu)

2- Nitric acid (96-72%)

3 - Deionizer water

2.5.2 Procedure

a portion of sample solution was transferred to a silica cell, and the UV spectra were obtained for dilute solution.

2.6 X-Ray Florescence Test

2.6.1 Requirements

1- X-Ray Florescence

2 - Stone samples , black tea and table salt as powder pellets

2.6.2 Procedure

Stone samples, black tea and table salt were applied as powder pellets