



### Short Communication

## Spectroscopic Analysis of Siddha Medicine “Nandukkal Parpam”

S. Ariponnammal

Department of Physics, Gandhigram Rural Institute, Gandhigram, Dindigul District Tamil Nadu, INDIA

Available online at: [www.isca.in](http://www.isca.in)

(Received 23<sup>rd</sup> January 2012, revised 6<sup>th</sup> March 2012, accepted 9<sup>th</sup> March 2012)

### Abstract

*A siddha medicine namely “Nandukkal Parpam” has been analysed by using UV spectroscopy and constant deviation spectrograph. An attempt has been made to study the parpam based on physicist point of view and the study reveals that the medicine contains iron and calcium as major constituents and traces of sodium and silicon.*

**Keywords:** Nandukkal Parpam, UV-Vis, constant deviation spectrograph

### Introduction

In olden days, our life was in co-ordination with nature. But nowadays, fast food culture leads to many health problems such as stone formation in kidneys and stomache disorder etc. In order to get cure from these disease, siddha medicine which is our ancient medicine, can be used. One such siddha medicine namely “Nandukkal Parpam” has been selected for the present study. It is mainly used for curing the urinary obstructions, inflammation of uragenital tract and grand in urine and bladder. This paper deals with the study of UV spectroscopy and constant deviation spectrograph on this medicine.

### Material and Methods

The siddha medicine “Nandukkal Parpam” has been purchased from siddha unit and used as such for the present study. The UV visible spectrum of the sample has been recorded in the region of 200-800nm using perkin Elenerlamda 35 model UV spectrophotometer and is shown in figure 1. The emission spectrum of constant deviation spectrograph has been recorded and the emission lines have been indexed by using standard values<sup>1</sup>.

### Results and Discussion

The UV- visible spectrum of the medicine “Nandukkal Parpam” is shown in figure 1 and the observed wavelength of the absorption peaks are tabulated in table 1. Since, the medicine is mainly prepared<sup>2</sup> from the crab’s legs, it is expected that the major element present in this may be calcium. Since the medicine is prepared at high temperature by a process called “Pudam”<sup>2</sup>, the element may be present in higher oxide forms. But calcium oxide is not stable on exposure to air and the most stable form is calcium carbonate. So, the UV-spectrum of calcium carbonate has been recorded and the observed wavelengths of absorption peaks are compared with that of medicine. And, they are found to be in good agreement with

each other as shown in table 1 confirming the presence of calcium carbonate in the medicine. But, some of the absorption peaks, which have been shown by the sample are not able to be indexed. So, in order to find the presence of other elements, the spectrum of constant deviation spectrograph is recorded.

The observed wavelengths of the emission lines obtained from the spectrum of constant deviation spectrograph are indexed as shown in table 2 and they are found to be in good agreement with the reported standard values<sup>1</sup>. The study of constant deviation spectrograph confirms the presence of calcium, iron, silicon and sodium in this medicine.

It is notable that the major constituents of the sample are calcium and iron. Since, the medicine is prepared from the crab’s legs, it may contain calcium and iron by nature. Moreover, during the preparation<sup>2</sup>, alkaline earth solution and lime water are added to the crab’s legs. This may enriches the medicine with calcium and sodium. In addition, Aerva juice and Radish juice are added during the preparation<sup>2</sup> of this medicine. It is already reported<sup>3</sup> that these juices are helping to dissolve the urinary crystals.

It is also notable that the medicine is also containing traces of silicon. This may be due to the preparation of the medicine in the earthen vessels. This is similar to the preparation of silicon doped Gallium Arsenide. When the silicon doped GaAs is prepared, Ga and As are heated in silica ampoules instead of adding silicon directly<sup>4</sup>. So, the silicon from silica ampoules will get automatically doped in GaAs. The silicon content in the medicine also contributed its own advantage. In olden days, ancestors used to say that the food cooked in earthen vessel cools our body and is very good for health. Moreover, the earthen vessels are having the property of filtering harmful radiations. So, the traditional method of the preparing siddha medicine in earthen vessels also helps to improve the health and hygiene.

### Conclusions

The analysis of UV spectroscopy and constant deviation spectrograph on “Nandukkal Parpam” reveals that the medicine contains calcium and iron as major components and traces of sodium and silicon. The calcium strengthens the bone, iron plays an important role in maintaining the Haemoglobin percentage in blood and the sodium helps to maintain the water level in our body. The silicon helps to improve the health and hygiene. The Aerva and Radish juice act as inhibitors for Urinary crystals. Thus, the medicine Nandukkal Parpam gives immediate and permanent cure to urinary obstructions and related diseases.

### References

1. Robert C.Weast, David R.Lide, Melvin J.Astle and William H.Beyer, CRC Hand book of Chemistry and Physics, 70<sup>th</sup> edition E-211 (1989).
2. Impcops Publisher, Formulary of siddha medicines, Fourth edition 225(1993).
3. Abstracts and Papers presented in UGC Refresher Course in Physics, Gandhigram Rural Institute, Deemed University Gandhigram, 30 (2002).
4. T.Udagawa and T.Nakanisi, Ninth international symposium on Gallium Arsenide and Related Compounds held at Oiso, Japan, Edited by T.Sugano, 19 (1981)

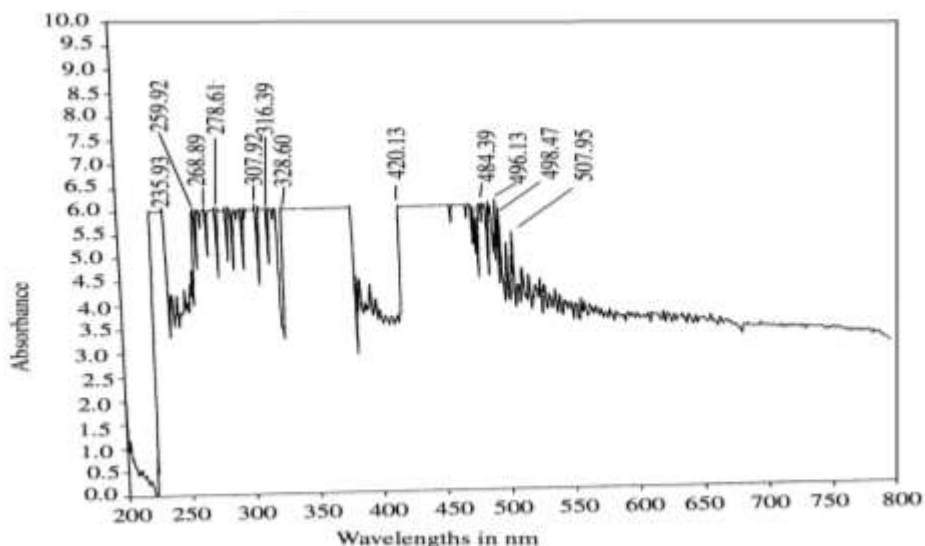


Figure . 1 The UV Spectrum of Nadukkal Parpam

Table-1

The Observed wavelengths of absorption peaks of the medicine “Nandukkal Parpam” obtained from UV spectrum is compared with that of calcium carbonate

S.No	Wavelengths of observed Absorption peaks (nm)	
	Nandukkal Parpam	CaCO <sub>3</sub>
1	235.93	233.42
2	259.92	260.19
3	268.89	267.57
4	278.61	-
5	307.92	306.84
6	316.39	316.02
7	328.60	328.10
8	420.13	-
9	484.39	-
10	496.13	494.52
11	498.47	-
12	507.95	-

**Table - 2**

The observed wavelengths of emission of the medicine Nandukkal Parpam obtained from Constant deviation spectrograph is compared with that of standard reported values<sup>1</sup> and the elements present are reported.

S.No.	Wavelengths of Emission lines (Å)		Elements Presents
	Nandukkal Parpam	Standard Values <sup>1</sup>	
1	5860.00	5857.45	Ca I
2	5839.68	5833.93	Fe III
3	5743.99	5744.19	Fe III
4	5723.30	5719.88	Fe III
5	4297.41	4299.23	Fe I
6	4250.29	4250.79	Fe I
7	4207.59	4206.18	Ca II
8	4195.81	4198.30	Fe I
9	4181.60	4181.75	Fe I
10	4169.17	4172.74	Fe I
11	4160.58	4159.799	Fe I
12	4153.22	4153.89	Fe I
13	4133.45	4132.06	Fe I
14	4129.36	4128.01	Si II
15	4120.74	4118.54	Fe I
16	4116.48	4113.70	Na II
17	4103.26	4109.82	Ca II
18	4089.02	4097.1	Ca II
19	4069.81	4071.7	Fe I
20	4061.22	4063.59	Fe I