



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),  
Sivakasi**

(Affiliated to Madurai Kamaraj University, Reaccredited with "A" Grade by NAAC,  
College with Potential for Excellence by UGC & Mentor Institution under UGC PARAMARSH)

**NAAC SSR Cycle IV (2015-2020)**

**3.7. COLLABORATION**

**3.7.2. FUNCTIONAL MoUs WITH ONGOING  
ACTIVITIES**

**MoUs WITH OTHER  
INSTITUTIONS**

**2016-2017**



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),  
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,  
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

**Name of the Department**

**: Department of Tamil**

**Name of the institution/ industry/ corporate house : Neelanila Publishers, Virudhunagar**

**நீலநிலா இதழ் குழுமம்**  
**நீலநிலா பதிப்பகம்**

தலைவரின் அலுவலகம்  
தலைவர் : நீலநிலா செவியகராஜ்  
முகவரி : 23, உ.பி.ஆர். கிட்டப்பா தெரு. விருதுநகர் - 626 001.  
பெண் : 94850 01251  
www.neelanila.blogspot.in  
e-mail : shenbagarajan\_r@yahoo.com

**வாரியப்பு : தமிழ்நாடு கலை இலக்கியப் பேரமன்றம் - விருதுநகர் கிளைச் செயலாளர்.  
இந்திய மக்கள் நூடக மன்றம் - விருதுநகர் மாவட்டத் தலைவர்.**

**எழுதியுள்ள நூல்கள்**

1. மாரோ அழகிய கழகம் (கவிதை) (2008)
2. வெற்றி உங்களை அழைக்கிறது (வய குவீன்ஸுக்குக் கட்டுரை) (2010)
3. வெள்ளி முனைத்தது (கட்டுரை தொகுப்பு) (2012)
4. மெய்யம் பேசும் வார்த்தைகள் (கவிதை) (2013)

**பெற்றுள்ள விருதுகள்**

1. மலர்ந்த நெய் முரசு (2009)
2. மலர்கலைச் செல்வர் (2010)
3. சேய் நாவர புள்ளிக்காரர் அறக்கட்டளை விருது (2010)
4. சக்தி T.K. கிருஷ்ணசாமி விருது (2012)
5. செங்கமழ் சிந்தனைப் பெய்மல் (2013)

**தேதி** : .....

நாள்: 5.04.2016

**புரிந்துணர்வு ஒப்பந்தம் (MOU)**

விருதுநகர், நீலநிலா இதழ் குழுமமும், சிவகாசி எஸ்.எ.பி.ஆர் மகளிர் கல்லூரியின் (தன்னாட்சி) தமிழ் உட்பிராங்க்வும் இணைந்து செய்து கொள்ளும் புரிந்துணர்வு ஒப்பந்தம்.

- ✓ நீலநிலா இதழ் நடத்தும் போட்டிகள் மற்றும் கவிப்பாடல்களில் மாணவிகளைய பங்கேற்கச் செய்தல்.
- ✓ இதழியல் தொடர்பான பயிலரங்கு மற்றும் கருத்தரங்குகளை நிகழ்த்துதல்.
- ✓ மாணவிகளின் படைப்புகளை இதழில் வெளியிடுதல்.
- ✓ மாணவியின் பேச்சுகளைவய வளர்த்தெடுக்கப் படும்பெறும் மற்றும் விவாத அரங்கம் நடத்துதல்.

ஒப்பந்தத்திற்கான கால எல்லை 2016 முதல் 2021 வரை

**நீலநிலா இதழ் குழுமம்,  
விருதுநகர்.**

**செவியகராஜ்  
தலைவர்**

**செவியகராஜ்  
முதல்வர் 5/4/16**

**எஸ்.எ.பி.ஆர் மகளிர் கல்லூரி,  
சிவகாசி**

**சுடாண்டிட்டு பாய் ஓரல்ஸ்  
இளையத்தினம் மகலிசு கல்லூரி,  
சிவகாசி.**

PUBLICATIONS OF STUDENTS' ARTICLES

2017



இலக்கியக் காலாண்டிதழ்



மா. ப. சிவசுப்பிரமணியன்  
வெவ்வி



# நீல நிலா

(படைப்பாளிகளின் வெளிச்சம்)

தமிழ்ச் சிறுத்தழ் சங்கம்  
மற்றும்  
மின்னல் கலைக்கூடம்  
விருது பெற்ற இதழ்

Handwritten signature in blue ink.



மறைந்த போராளி பிடல் காஸ்ட்ரோ அவர்களுக்கு செவ்வணக்கம்

தமிழ்நாடு கலை இலக்கியப் பெருமன்றம் விருதுநகர் கிளை  
25ஆவது வெள்ளி விழா படைப்பாளிக் சிறப்பிதழ்

தனிச்சுற்றுக்கு மட்டும்

விலை : ரூ. 15/-

வானம் - 13

உலா - 2

இதழ் - 39

நீல நிலா

பிப்ரவரி 2017

1976 முதல் 2008 வரை கியூபாவின் அதிபராக பதவி வகித்தார் காஸ்ட்ரோ.

## கல்லூரிச் சோலை

சிவகாசி தி ஸ்டாண்டர்ட் ஃபயர் ஓர்க்ஸ் இராஜரத்தினம்  
மகனிர் கல்லூரி மாணவியர்களின் கவிதைகள்

### முரண்

வானம் இருண்டது  
எங்கும் இருள்பரவியது...  
அழத் தொடங்கியது  
அழகான வானம்  
பெரிய பெரிய கண்ணீர்த்துளி  
அவை  
தாயின் மடியில் விழுந்தது...  
என்ன ஒரு அதிசியம்!  
பிள்ளை கண்ணீர் வடிக்க  
தாய் மனம் குளிர்ந்து  
வளம் பெறுகிறாள்..!

- க. கிருஷ்ணவேணி,  
முதுகலை இரண்டாமாண்டு கணிதம்.

### ஹைக்கூ கவிதைகள்

எவ்வளவு தைத்தாலும்  
சேர்க்க முடியாத உடை  
பழைய நினைவுகள்.

- பொ. பாண்டிச்செல்வி.

சந்தனம் பூசவில்லை  
இருந்தாலும் மணக்கிறது  
அப்பாவின் வியர்வை!

- பொ. பாண்டிச்செல்வி,  
முதுகலை இரண்டாமாண்டு கணிதம்.

### என் தோட்டத்துக் கேணி

கேணி நிறைய  
மாரி நனைத்த நீர்...  
கேணி கவற்றில் சின்னதொரு  
கிளை!  
தண்ணீரைத் தொட  
முயற்சி செய்து  
தோற்றுக் கொண்டிருந்தது  
அந்த எருக்கஞ்செடியின் கிளைகள்!  
கிளை ஒன்றும் விடாமல்  
தங்கள் கூட்டை கட்டி  
ஆடவிட்டிருக்குது  
அந்த தூக்கணாங் குருவி!  
உச்சியில் சூரியன் - அந்த நேரம்  
கேணி கேக்கும் சங்கீதம்!  
தூக்கணாங்குருவி கூச்சலும்  
நீர் மேல் வந்து சலசலவென்று  
உள்ளே செல்லும்  
மீனின் சத்தமும்...  
கேணியைச் சுற்றி  
வளைத்த மரங்கள் - அதன்  
கிளைகள் ஆடும் சத்தம்...  
அந்த சத்தத்தை கேணி  
சத்தமில்லாமல்  
சங்கீதமாய்  
கேட்டுக் கொண்டிருந்தது!

- க. கிருஷ்ணவேணி,  
முதுகலை இரண்டாமாண்டு கணிதம்.



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College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

**Name of the Department**

**: Department of Tamil**

**Name of the institution/ industry/ corporate house : Kandhaga Pookkal Ilakkiya amaipu,  
(Kandhaga Pookal Literacy Organisation)  
Sivakasi.**



**கந்தகப்பூக்கள் இலக்கிய அமைப்பு**

120, குட்டியனஞ்சான் தெரு.

சிவகாசி - 626 123.

செல்விடபேசி : 98435 77110 மின்னஞ்சல் : sivakasi@gmail.com

விடியலுக்காக காத்திருக்க நாம் சூரியகாந்திகள் அவ்வ... நாம்தான் சூரியன்!

தள்ள : 5.4.16

**புரிந்துணர்வு ஒப்பந்தம் (MOU)**

சிவகாசி, கந்தகப்பூக்கள் இலக்கிய அமைப்பும், சிவகாசி என்.கே.பி.ஆர். மகளிர் கல்லூரியின் (தன்னாட்சி) தமிழ் உயராய்வு வையறும் இணைந்து செயல்படுகின்றன. இவற்றுள் ஒப்பந்தம்.

- ✓ கந்தகப்பூக்கள் இலக்கிய அமைப்பு நடத்தும் வீட்டிலும் மாணவிகளைப் பயிற்சி செய்வதும்.
- ✓ படைப்புகளின் தொடர்பான யோசனைகளை திணைக்காணும்.
- ✓ கந்தகப்பூக்கள் இலக்கிய அமைப்பு, இணைந்து மாணவிகள் பயிலும் கருத்துரைப்புகள் தீர்மானம்.

ஒப்பந்தத்திற்கான காலம் 2016 முதல் 2021 வரை

தலைவர் & செயலாளர்

கந்தகப்பூக்கள் இலக்கிய அமைப்பு,

சிவகாசி

முதல்வர்  
5/4/16

என்.கே.பி.ஆர். மகளிர் கல்லூரி,

சிவகாசி.

5/4/16

தலைவர்

தமிழ் உயராய்வு வையறம்,

என்.கே.பி.ஆர். மகளிர் கல்லூரி,

சிவகாசி

முதல்வர்  
என்.கே.பி.ஆர். மகளிர் கல்லூரி,  
சிவகாசி.

ஆசிரியர் குழு :

கந்தகப்பூக்கள் மூலப்பதி : +91 98435 77110,  
யுவாபாரதி கந்தகப்பூக்கள் : +91 98437 53894  
கந்தகக்கவி பாண்டி : +91 98436 10020.



# கந்தகப்பூக்கள் கிலக்கிய அமைப்பு நூல்கள் வெளியீட்டு விழா



8 ஜனவரி 2017 குாயிறு  
அன்னை கில்லம் தொடக்கப் பள்ளி,  
சிவகாசி.

நுரைவுப் பரிசு



பேராசிரியர் ச.தனகலட்சுரி அவர்களுக்கு

முதல் நூலை வெளியீட்டு சிறப்பித்தமைக்கு  
நன்றி

# கந்தகப்பூக்கள் கிலக்கிய அமைப்பு நூல்கள் வெளியீட்டு விழா



8 ஜனவரி 2017 சூரியநீல  
அன்னை கில்லம் தொடக்கப் பள்ளி,  
சிவகாசி.

நுணைவுப் பள்ளி



பேராசிரியர் என். புவனேஸ்வரி அவர்களுக்கு

சுன்புற வடிவிக் சிறப்பித்தமைக்கு  
நன்றி





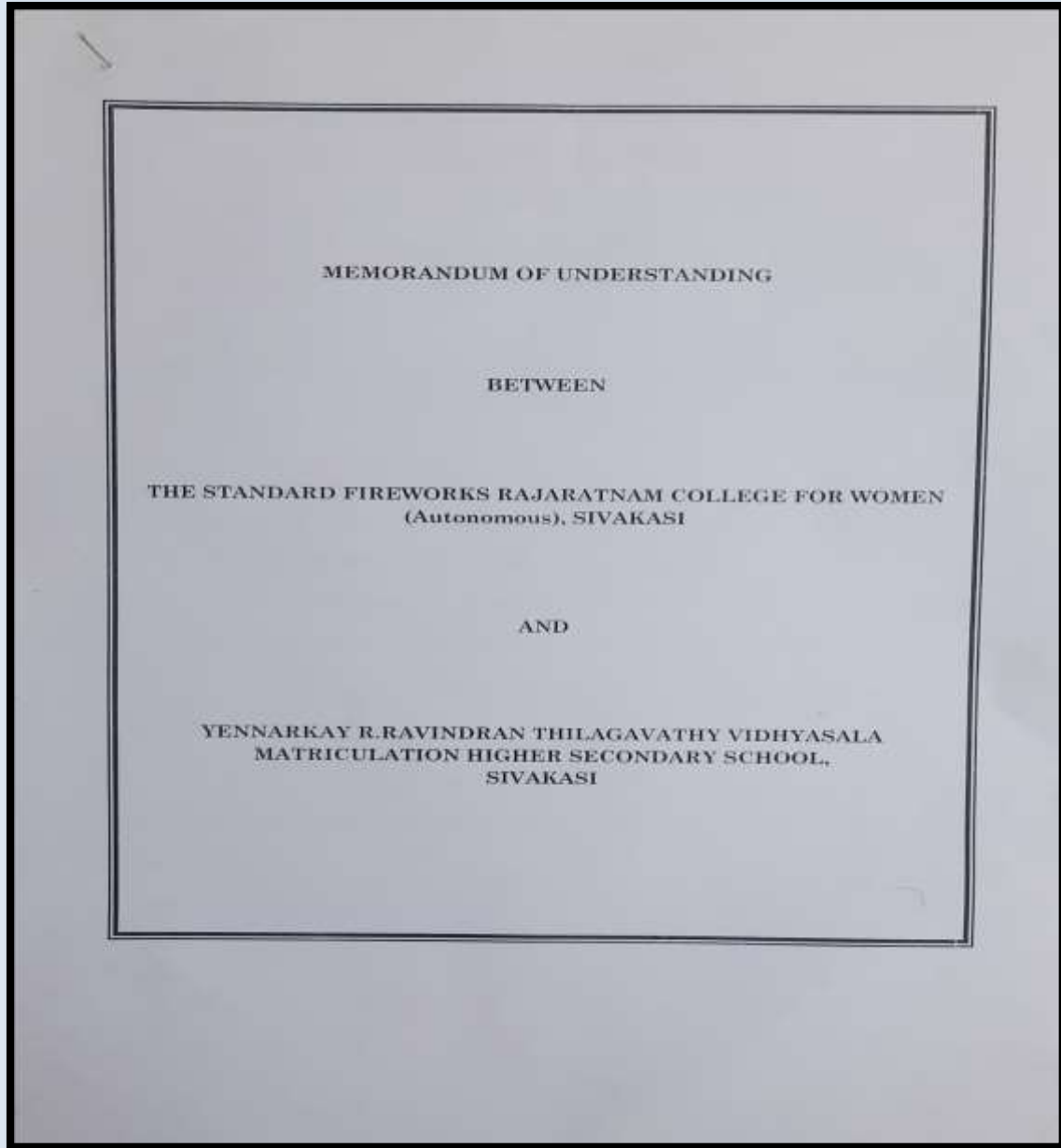
**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),  
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,  
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

**Name of the Department**

**: Department of Commerce SF**

**Name of the institution/ industry/ corporate house : Yennarkay R.Ravindran Thilagavathy  
Vidhyasala Matriculation Higher  
Secondary School, Sivakasi.**



## DRAFT OF MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is executed

between

Management of The Standard Fireworks Rajaratnam College for Women  
(Autonomous), Sivakasi

and

Management of Yennarkay R.Ravindran Thilagavathy Vidhyasala Matriculation  
Higher Secondary School, Sivakasi

The Memorandum of Understanding covers collaboration in the following areas:

1. Conducting jointly the Job Oriented Course on "Pre-School Education".
2. YRTV School teachers will handle the theory classes.
3. Permit the students undergoing the course to have practical classes using Montessori equipments and teaching aids in YRTV School Campus.

The specific activities and cost of same would be worked out in detail keeping in mind the interest of both institutions.

The terms of Memorandum of Understanding can be modified with mutual concurrence to suit the changing needs of the future as when such changes are warranted.

The Memorandum of Understanding initially covers a three years period from August 2016. In case either of the parties decides to terminate the agreement before the said period, one month advance notice is to be given.

Executed on the Second day of August 2016 at Sivakasi.

*Dasineha*

PRINCIPAL

PRINCIPAL  
The Standard Fire Works  
Rajaratnam College for Women,  
SIVAKASI.

*Yennarkay R. Ravindran Thirugavathy*

PRINCIPAL

YENNARKAY R. RAVINDRAN THIRUGAVATHY  
VIDHYASALA MATRICULATION HIGHER  
SECONDARY SCHOOL, SIVAKASI

1. Witness

*Dr. K. Rajeswari*  
28.16  
**Dr. K. RAJESWARI**  
Associate Professor & Head,  
Department of Commerce,  
S.F.R. College For Women,  
SIVAKASI - 626 123.

2. Witness

*Dr. M. Jayalakshmi*  
**Dr. M. JAYALAKSHMI**  
M.Com., M.Phil., Ph.D.,  
Department of Commerce  
S.F.R. COLLEGE FOR WOMEN  
SIVAKASI - 626 123

3. Witness

*L. Muthu Latha*  
**(Mrs. L. MUTHU LATHA)**  
K.G. TEACHER  
YRTV Mat. Hr. Sec. School,  
SIVAKASI.



THE STANDARD EXAMINATIONS KALINGAN COLLEGE FOR WOMEN, Bhubaneswar													SCHEME OF EXAMINATIONS, SCHEME OF STUDY PERIODS															
CLASS - I (1st - 2nd - 3rd - 4th)													21															
COURSE CODE & TITLE - (A)0201 - The School Education																												
COURSE TEACHER																												
Sl. No.	Reg. No.	NAME	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	21st	22nd	23rd	24th	25th	
B.E.A																												
20	1412005	V. Mahalakshmi																										
21	1412006	L. Manojkumari																										
22	1412007	B. Sushil																										
B.E. (Biology)																												
23	1412008	P. Anuradha																										
24	1412009	K. Ashwini																										
25	1412010	S. Manjushree Devi																										
B.E. (Physics)																												
26	1412011	S. Swetha																										
27	1412012	S. Anuja																										
B.E. (Accounting)																												
28	1412013	A. Anuradha Devi																										
29	1412014	H. Tejapriya																										
30	1412015	A. Manojkumari																										
B.E. (English)																												
31	1412016	A. Manojkumari																										
32	1412017	M. Swetha																										
33	1412018	M. Rajamani																										
B.E. (IT)																												
34	1412019	T. Anuradha																										
B.E. (Marketing)																												
35	1412020	S. Manojkumari																										
36	1412021	A. Anuradha																										
37	1412022	B. Manojkumari																										
B.E. (NCD)																												
38	1412023	V. Manojkumari																										
39	1412024	S. Jyoti Shakti																										
40	1412025	T. Viji																										

THE STANDARD EXAMINATIONS KALINGAN COLLEGE FOR WOMEN, Bhubaneswar													SCHEME OF EXAMINATIONS, SCHEME OF STUDY PERIODS															
CLASS - I (1st - 2nd - 3rd - 4th)													22															
COURSE CODE & TITLE - (A)0201 - The School Education																												
COURSE TEACHER																												
Sl. No.	Reg. No.	NAME	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	21st	22nd	23rd	24th	25th	
B.E. (IT)																												
41	1412026	P. Pandevarani																										
42	1412027	B. Swetha																										
43	1412028	M. Veerabani Devi																										
B.E.A																												
44	1412029	A.R. Manojkumari																										
45	1412030	S. Sri Manjushree																										
46	1412031	R. Thelamalabika																										
B.E. (Biology)																												
47	1412032	T. Pandevarani																										
48	1412033	P. Subhalakshmi																										
No. of Students Present																												
			15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	
Course Teacher																												
			[Handwritten names]																									
Staff-in-charge																												
			[Handwritten names]																									
MOD																												
			[Handwritten names]																									
Course Coordinator																												
			[Handwritten names]																									
Principal																												
			[Handwritten names]																									



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),  
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,  
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

**Name of the Department : Department of Chemistry**  
**Name of the institution/ industry/ corporate house : Pharmafabrikon, Madurai**

**30 Three Decennium Commitment**

**pharmafabrikon**  
UNIT II, 91-1, Sivagangai Road, Villathur, Madurai - 625 020, INDIA.  
Ph : 0452-242 9416, 09750 972061. Fax : 0452-242 9299  
E-mail : winston.fabrikon@gmail.com

26.08.2016

**MEMORANDUM OF UNDERSTANDING**

This Memorandum of Understanding is executed Between

Management of The Standard Fireworks Rajaratnam College for Women, Sivakasi

AND

PHARMAFABRIKON, Madurai

The Memorandum of Understanding covers collaboration in the following areas:

1. Conducting inplant training in specific fields.
2. Offering technical and academic consultancy.
3. Utilizing resource persons periodically.
4. Any other activities that are deemed fit.

The specific activities and cost of same would be worked out in detail keeping in mind the interest of both the College and the company.

The terms of Memorandum of Understanding can be modified with mutual concurrence to suit the changing needs of the future as and when such changes are warranted.

The memorandum of understanding initially covers a period of FIVE years from the date of signature.

For PHARMAFABRIKON

For Standard Fireworks Rajaratnam College for Women

(P.Ponrajan)  
Managing Partner

**Dr. D. SASIREKA**  
Principal  
The Standard Fireworks Rajaratnam College for Women,  
SIVAKASI.

UNIT - I, 1/332, Otthappatti, Karuppapurani (PO), Madurai - 625 020. INDIA.  
Ph : 0452 - 653 5001, 97509 72052 Fax : 0452 - 242 9290

**FIELD VISIT**

**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS), SIVAKASI.**

Affiliated to Madurai Kamaraj University  
Reaccredited with 'A' Grade by NAAC & College with Potential for Excellence by UGC



**Mrs. A.Aruna, B.Sc.,**  
Secretary

**Dr.(Mrs.)D.Sasireka, M.Sc.,M.Phil.,Ph.D.**  
Principal

Ref. No. \_\_\_\_\_

01.08.2016

To  
The Managing Director,  
Pharmafabrikon,  
Madurai.

Sir,

**Sub:** Field Visit to Pharmafabrikon-reg:

\*\*\*\*\*

A batch of 48 students comprising I M.Sc and II M.Sc and two faculty members, Mrs. N. Uma Sangari and Dr. S. Shailaja, Assistant Professors of department of Chemistry are willing to visit your pharma industry to have an insight to the real working environment and various techniques adopted for the manufacture of pharmaceutical formulations on 03.08.2016. Kindly permit them to visit your industry.

*N. Uma Sangari*  
Staff-in-charge

*S. Shailaja*  
Head of the Department

*D. Sasireka*  
PRINCIPAL 1/8/16

PRINCIPAL  
The Standard Fire Works  
Rajaratnam College for Women,  
SIVAKASI.

\* Enrichment with knowledge \* Empowerment of women \*

Phone : 04562 - 220389  
Fax : 04562 - 226695

E-Mail : [sfrc@sfrcollege.org](mailto:sfrc@sfrcollege.org).  
Website : [www.sfrcollege.org](http://www.sfrcollege.org).



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),  
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,  
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

**Name of the Department : Department of Commerce SF**  
**Name of the institution/ industry/ corporate house : Kumar Commercial Institute, Sivakasi.**

**DRAFT OF MEMORANDUM OF UNDERSTANDING**

**This Memorandum of Understanding is executed**

**Between**

**Management of The Standard Fireworks Rajaratnam College for  
Women, Sivakasi**

**AND**

**Management of Kumar Commercial Institute, Sivakasi**

The Memorandum of Understanding covers collaboration in the following areas:

1. Conducting the course jointly
2. Offering the training in long hand to short hand
3. Offering the training in short hand to long hand
4. Organizing the practicals and record preparation.
5. Any other activities that are deemed fit.

The specific activities and cost of same would be worked out in detail keeping in mind the interest of both the institutions.

The terms of Memorandum of Understanding can be modified with mutual concurrence to suit the changing needs of the future as when such changes are warranted.



The memorandum of understanding initially covers a three years period from December 2016. In case either of the parties decides to terminate the agreement before the said period, one month advance notice to given

Executed on the Fifth day of December 2016 at Sivakasi.

*Sasireka*  
PRINCIPAL  
**Dr. D. SASIREKA**  
PRINCIPAL,  
The Standard Fireworks Rajaratnam  
College for Women,  
SIVAKASI.

*For Kumar Commercial Institute*  
\* *Kumar*  
PROPRIETOR/PRINCIPAL  
*Principals*

1. Witness

*K Rajeswari*  
**Dr. K. RAJESWARI**  
Associate Professor & Head,  
Department of Commerce,  
S.F.R. College For Women,  
SIVAKASI

2. Witness

*Hayalakshmi*  
DEPARTMENT OF COMMERCE,  
S.F.R. College for Women,  
SIVAKASI-626 123

3. Witness

*K. Dendral*  
*K. JAYENDRAN*  
25. Sammakulam Street -  
VIRUNTHAKUR





S.No	Roll No.	Name of Student	17/11	18/11	19/11	20/11	21/11	22/11	23/11	24/11	25/11	26/11	27/11	28/11	29/11	30/11
48.	416023	SUBAHANI <u>(B.Sc (Hkm. Bio))</u>	x	x	x	x	x	x	x	x	x	x	x	x	x	x
49.	416023	T. EDWART	x	x	x	x	x	x	x	x	x	x	x	x	x	x
50.	416001	S. SOBANA	x	x	x	x	x	x	x	x	x	x	x	x	x	x

S.No	Roll No.	Name of Student	17/11	18/11	19/11	20/11	21/11	22/11	23/11	24/11	25/11	26/11	27/11	28/11	29/11	30/11
48.	416023	SUBAHANI	x	x	x	x	x	x	x	x	x	x	x	x	x	x
49.	416023	T. EDWART	x	x	x	x	x	x	x	x	x	x	x	x	x	x
50.	416001	S. SOBANA	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Signature of course teacher: [Signatures]

Signature of course in charge: [Signatures]

Signature of Co-ordinator: Hf-nyalakshmi

Signature of J/S/SE Co-ordinator: c.c.c.c.

Signature of course teacher: [Signatures]

Signature of course in charge: [Signatures]

Signature of Co-ordinator: Hf-nyalakshmi

Signature of J/S/SE Co-ordinator: c.c.c.c.

PRINCIPAL

[Signatures]

[Signatures]



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),  
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,  
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

**Name of the Department**

**: Department of Microbiology**

**Name of the institution/ industry/ corporate house : BELL Institute of Hotel Management  
and Catering Technology, Sivakasi**

**INDIA NON JUDICIAL**

**Rs.20 TWENTY RUPEES**

Bell Institute of Hotel Management and Catering Technology, Sivakasi

தமிழ்நாடு தாமலநாடு TAMIL NADU

சமீபநாடு எண் 2/192

நாள் 15.6.2016

மதிப்பு ரூ.20

சுற்றுமதுகுடிமதுகள் குத்திரத்தார் கிழகமகயர்வர்

சிலகாசி

உரிமம் எண் : 3193/A1/2000-4

**COLLABORATIVE ACADEMIC AGREEMENT BETWEEN BELL INSTITUTE OF HOTEL MANAGEMENT AND CATERING TECHNOLOGY, SIVAKASI AND SFR COLLEGE FOR WOMEN, SIVAKASI**

1. This Collaborative academic agreement is entered into between Bell institute of Hotel Management and catering Technology (Run by Darling Chelladurai Educational & Charitable Trust) 2/242, Srivilliputhur Road, Malli Post, Sivakasi – 626 141 represented by its Registrar as Party No.(1) and SFR College for women, Sivakasi, as Party No.(2) on 14<sup>th</sup> July, 2016.
2. Whereas Party No.(2) has proposed to Party No.(1) to conduct the JOC in Catering & Hotel Management as mentioned in Annexure - I, where as Party No.(1) has agreed to spare its expertise, faculty, buildings and other infrastructural facilities for conducting the above mentioned programmes and whereas both the parties have agreed to abide by the terms and conditions as hereunder.

For Bell Institute of Hotel Management & Catering Technology  
Party No.(1)

*[Signature]*  
Principal 1

*[Signature]*  
Party No.(2)  
PRINCIPAL  
The Standard Fire Works  
Rajaratnam College for Women,  
SIVAKASI.

### **3. Promotion of Programmes**

The Party No.(2) shall take up the responsibility of promoting the program among its students.

### **4. Programmes, Regulations, Syllabus and Scheme of Examinations**

The length of the program is for 15 days (14 Classes + 1 Practical Examination). The schedule of dates will be proposed by Party No.(2) and mutually agreed upon by both the parties. The Party No.(1) shall conduct classes and examinations not excluding the above 13 days. Any absence by students will be communicated to Party No.(2). Any default of communicated dates by Party No.(2) shall be compensated at the discretion of Party No.(1)

The Party No.(1) shall conduct 3monthly test and a model practical examinations on specific agreed dates. The Party No.(1) shall forward the mark list to Party No.(2).

Attendances register of students to be maintained by both Parties. Party No.(2) will designate a responsible staff for communication with Party No.(1) on day to-day activities.

Party No.(1) will co-operate with Party No.(2) for setting up question papers for examinations.

### **5. Admission Procedure**

The Party No.(2) shall admit students in the program and after scrutiny shall confirm admissions of candidates list to Party No.(1). Once the classes starts no amendment of student list is permitted by Party No.(2).

### **6. Issue of certificates**

Any certificates regarding the completion of the course will be issued by Party No.(2).

### **7. Students Strength**

It is agreed upon by both the parties to keep the student strength to a minimum of 50 and maximum decided by Party No.(2).

### 8. Learning Resources

It is the responsibility of Party N.(1) to make available necessary learning resources to the students. Notes will be framed by Party No.(1) and approved by Party No.(2). Any tools of the trade required are the responsibility of the students to purchase.

### 9. Conduct of classes

It is the responsibility of Party No.(2) to conduct classes and the practical's. The students should have secured minimum of 80% attendance.

### 10. Financial sharing Between Party No.(1) and Party No.(2)

The Party No.(2) shall collect the fees for the course and pay Party No.(1) Rupees Three Thousand Five Hundred Per students(Rs.3500/-) excluding transportation and outdoor duties. The fee shall be paid as soon as the completion of the 15- day course.

### 11. Validity of Agreement

This agreement shall come into effect from the date of signing and shall be in force for two academic years. i.e., 2016 - 17 & 2017 - 18 and expires on May 2018. Further the agreement can be renewed on both parties concern.

For Bell Institute Of Hotel Management &  
Catering Technology

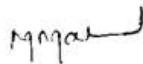
Party No.(1)

  
Principal

Witness 1:



Witness 2:



  
Party No.(2)  
PRINCIPAL  
The Standard Fire Works  
Rajaratnam College for Women,  
SIVAKASI.





2016-2017 Even Semester

THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN, SIVAKASI

CLASS: III VU4

COURSE CODE & TITLE: 1401507 - Catering technology & hotel management

COURSE TEACHER:

AN AUTONOMOUS INSTITUTION, ACCREDITED WITH FIVE STAR STATUS BY NAAC

22

SNO	Reg. No.	NAME	Department	E-10-16		E-11-16		E-12-16		E-13-16		E-14-16		E-15-16		E-16-16		E-17-16		E-18-16		E-19-16		E-20-16		E-21-16		E-22-16		Total
				F	A	F	A	F	A	F	A	F	A	F	A	F	A	F	A	F	A	F	A	F	A	F	A	F	A	
30	141401	S. Tsuvariya Lakshmi	Couture design and Fashion	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
31	141405	P. Sobana	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
32	141403	P. Raja Poorna	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
33	141402	C.R. Aparna	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
34	141409	H. Saranya	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
35	1414033	S. Ruby	"	X	X	A	A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
36	1414016	M. Sonavia	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
37	141003	P. Manja	B.S.A (S.F)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
38	141001	P. Varshini	"	X	X	A	A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
39	1416033	Y. Lalithambigai	Micobiology	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
40	141603	K. masarunil	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
41	1416018	C. Ponnthal	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
42	1416036	P. Karimashri	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
43	402380	K. Pavithra	English (S.F)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
44	402006	R. Mercy Prigadhashini	English (R)	X	X	A	A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
45	402358	S. Srinagarathi	English (S.F)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
46	402023	B. Shabana	English (R)	X	X	A	A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
47	402362	K. Shanmuga Priya	English (S.F)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
48	402355	V. Jaya Vidha	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
49	402318	P. Vigneshwari	"	X	X	A	A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
50	402010	S. Sula Bhavana	English (R)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
51	402046	P. Ananthavathi	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
52	402045	S. Abhinaya	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
53	402043	J. Patsyanka	"	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
54	402039	V. Divya	History	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Signature of the Faculty: [Signatures]

Signature of the course coordinator: [Signature]

Signature of the HOD: [Signature]

Jee. co. ordinator: [Signature]

Principal: [Signature]

PRINCIPAL: [Signature]

PRINCIPAL: [Signature]

PRINCIPAL: [Signature]

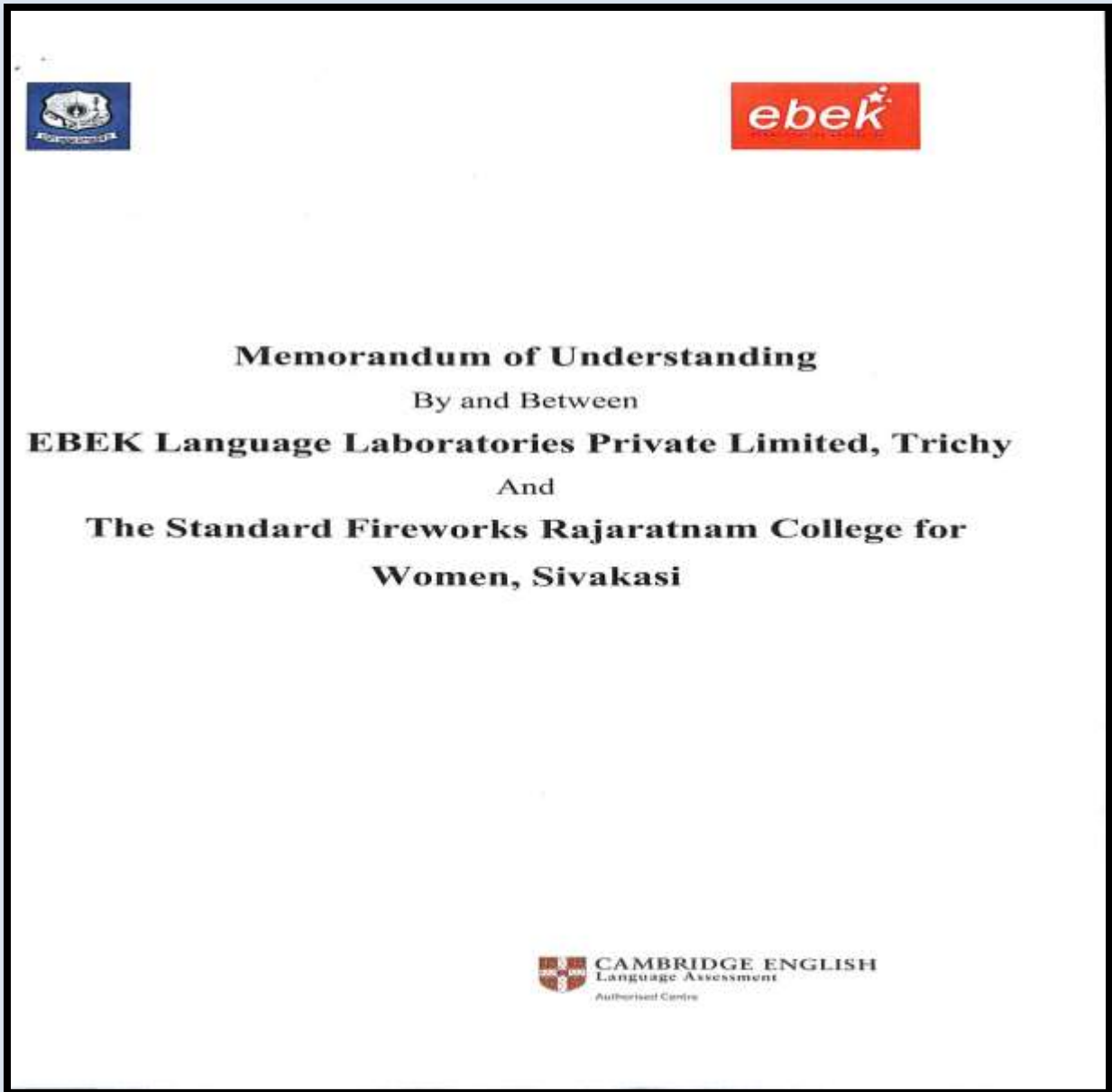
PRINCIPAL: [Signature]



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),  
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,  
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

**Name of the Department : Department of English**  
**Name of the institution/ industry/ corporate house : EBK Language Laboratories Private Limited, Trichy**





This Memorandum of Understanding (MOU) is made at Sivakasi on the First day of June, 2015.

By and between

M/s. Ebek Language Laboratories Private Limited, a company incorporated under the Companies Act, 1956, having its registered office at 68, Parvathi Ammal Nagar, Veereswaram, Srirangam, Trichy – 620 006, Tamil Nadu, represented by its Vice President, Mr. Neslyn Johnson as its authorised signatory, hereafter referred to as "Ebek".

and

The Standard Fireworks Rajaratnam College for Women, Thiruthangal Road, Sivakasi, Virudhunagar District, hereafter referred to as "The Institution", represented by its Principal, Dr. (Mrs.) D.Sasireka as its authorized signatory, hereafter referred to as "SFRCW".

Ebek and The Institution shall hereinafter be collectively referred to as "Parties" and individually as a "Party".

WHEREAS:

Ebek is the authorized Examination Center for Cambridge English Language Assessment (Cambridge English) for the conduct of the BEC Exams and is in the business of conducting English language training programmes under its trade mark "EBEK" and has acquired a reputation for providing spoken and written English Language communication classes of global competence.

The Standard Fireworks Rajaratnam College for Women, Sivakasi, was established in 1968. It is affiliated to the Madurai Kamaraj University. The Institution's unshakable mission is to empower rural women with communicative competence and employability potentials to compete in the global scenario and confront the challenges. SFRC's commitment to the cause of academic excellence through diligence has led to a number of academic innovations.

The Institution wishes to conduct BEC - Cambridge English Language Assessment (Cambridge English) to benchmark the language skills of their students to international standards. Hence, the Institution will partner with Ebek for the conduct of the BEC examination which is part of the Cambridge English Language Assessments and Ebek has agreed to the same subject to certain terms and conditions mutually agreed between the Parties. The Parties are desirous of recording the terms of the collaboration agreed to between them.

NOW, THEREFORE, in consideration of the mutual understanding and agreements set forth herein, the Parties hereto hereby agree as follows:





#### I. TERM

This MoU shall come into effect on this date and shall be valid for a period of three years ("Initial Term") unless otherwise extended in writing by the Parties or terminated in accordance with the terms hereof.

#### II. GRANT OF RIGHTS

The Institution hereby grants to Ebek the exclusive right to train and conduct the BEC Exams within the premises of the Institution and Ebek hereby accepts the same.

#### III. OBLIGATIONS OF EBK

1. Ebek shall train and prepare students for the BEC Exams as required by the Institution.
2. Ebek shall conduct the BEC – Preliminary, Vantage and Higher Exams, Computer Based as well as Pen and Paper Based as applied for by the Institution.
3. Ebek shall be responsible for the question papers and the complete organization and conduct of the BEC Exams on the test dates as per stringent rules laid by Cambridge English Language Assessment.
4. Ebek shall be responsible for the question papers after the conduct of the BEC Exams.

#### IV. OBLIGATIONS OF THE INSTITUTION

1. The Institution agrees to register a minimum of 50 students for the Cambridge English: BEC Exams for each session applied for by the Institution.
2. The Institution works towards making BEC as part of the curriculum for the students.
3. The Institution shall collect all filled-in application forms and payments and hand over the same to Ebek before the deadline for applications, along with copies of College ID proof of students.
4. The Institution shall provide the necessary venue arrangements for the conduct of the BEC Exams as required by Ebek.
5. For the conduct of the Computer Based BEC Exams, the Institution shall provide Ebek with the necessary computer systems with LAN and internet connections (with system specifications as required by Cambridge English) and technical assistance throughout the conduct of the exams.
6. The Institution shall provide sound proof classrooms for the conduct of the BEC Speaking Exam. This shall be made available for days requested by EBK.



#### V. SUPPORT FROM EBK

1. Will organise a one day teacher training workshop which will help teachers in preparing themselves and students for the Cambridge English BEC Exams.
2. Provide the Institution with quality assurance as required on the testing process.
3. Work with the Institution as reasonably required on any other issues relating to teaching and testing English for its students.
4. Provide BEC preparation material free of cost to students who register for the BEC Exams.
5. Conduct BEC mock tests for students who register for the BEC Exams.
6. Provide the Institution with approval to use the Cambridge English Preparation Centre Logo in all publicity material, including the institution's website, subject to the Institution registering a minimum of 500 candidates a year for the BEC Exams. However, the Institution must seek Ebek's & Cambridge English's approval to ensure that the use of Cambridge English Preparation Centre logo is within the specified guidelines. The Institution can also be made an approved Cambridge Preparation Centre, subject to the institution registering a minimum of 100 students in a year for the BEC Exams.

#### VI. COMMERCIAL TERMS

1. The commercials given below are the BEC Exam Fees. This fee shall be applicable till June this year and will change accordingly if Cambridge English changes the exam fee for BEC.

BEC Preliminary – Rs 2600

BEC Vantage – Rs 3300

BEC Higher – Rs 4300



**CAMBRIDGE ENGLISH**  
Language Assessment

Authorized Centre



#### VII. PAYMENT TERMS

- a. 100% payment shall be made at the time of submitting the BEC Exam Application forms.
- b. The fee decided for 2015 is applicable till June this year. There may be changes in the current or subsequent years depending upon the BEC exam fees set by the Cambridge English.

#### VIII. CONFIDENTIALITY

1. Each Party shall keep confidential and shall not without the prior consent in writing of the disclosing Party copy or disclose to any third party the content of any documents or information (whether of a commercial, financial or technical nature or which is identified as being confidential) acquired or received in writing, orally or in any other tangible or intangible form from the other Party in connection with this MoU, and such information will be referred to as "Confidential Information".
2. Confidential Information shall not include any information which (i) is known to the public; (ii) is lawfully acquired by the receiving Party; (iii) was known to the receiving Party without breach hereof; (iv) was or is independently developed by the receiving Party; or (v) is required to be disclosed by governmental or judicial order, in which case the Party so required shall give the other Party prompt written notice, where possible, and use reasonable efforts to ensure that such disclosure is accorded confidential treatment and also to enable the other Party seek a protective order or other appropriate remedy.

#### IX. TERMINATION

This MOU may be terminated:

1. By unanimous consent.
2. In the event of any lawful authority ordering the Parties to terminate this MoU.
3. The Parties agree that this clause is exhaustive and the Parties shall terminate this MOU only in accordance with the terms hereof.



**X. APPLICABLE LAW AND ARBITRATION**

1. This Agreement shall be governed by Indian law.
2. Any dispute arising out of or in connection with this MoU, including any question regarding its existence, validity or termination, shall be referred to and finally resolved by arbitration at Chennai, India, in accordance with the Indian Arbitration and Conciliation Act, 1996. The arbitration shall be conducted by three (3) arbitrators with each Party appointing an arbitrator and the two arbitrators so appointed appointing the third and presiding arbitrator. The language of the arbitration shall be English.
3. No Party shall disclose to any third party the existence, nature, content, or outcome of any arbitration, or purported arbitration, brought in respect of this MOU.

The Vice-President of EBK and the Principal of SFRC have signed this MoU on the First day of June, 2015, at Sivakasi.

The Principal,  
Dr. (Mrs.) D.Sasireka  
For The Standard Fireworks Rajaratnam  
College for Women, Sivakasi

*D.Sasireka*  
PRINCIPAL  
Authorised Signatory  
The Standard Fire Works  
Rajaratnam College for Women,  
SIVAKASI.  
Date: 4/6/15

Witness: *S. Geetha*  
1.6.15  
**Dr. (Ms.) S.GEETHA**  
HOD of English  
SFR Co  
SIVA  
**Dr. (Ms.) S.GEETHA**  
HOD of English  
SFR College for Women  
(Autonomous)  
SIVAKASI - 626 123.

Vice President  
Mr. Neslyn Johnson  
For Ebek Language Laboratories Private  
Limited, Trichy

*Neslyn Johnson*  
Authorised Signatory  
Date: 01.06.15

Witness: *B. Gopalan*







Sl. No.	MS	Vr	Sr	Ap	Sr	Sr
17. M. Suguna II BA Eng (R)			a			a
18. S. Tanani						a
19. B. Thiruviraiselvi		a	a	a	a	
20. R. Maheswari		a	a	a	a	
21. R. Vani II BSc. IT				a	a	
22. P. Raja Rajeshwari				a	a	
23. M. Dharmi II BA Eng (SF)				a	a	a
24. R. Neeralakshmi				a	a	a
25. R. Lakshmi II BA Eng (SF)		a				a
26. R. Anitha		a		a	a	a
27. P. Chitra		a	a	a	a	a
28. K. Anitha		a	a	a	a	a

No. of Present 25 18 15 11 10 2 10  
 Signig Staff 20/6 14/6 10/6 10/6 5/6 5/6 10/6

Signature of Co-ordinator: K. Anitha

Signature of H.O.D : S. Anitha

PRINCIPAL

Sl. No.	MS	Vr	Sr	Ap	Sr	Sr
17. M. Suguna II BA Eng (R)						
18. S. Tanani						
19. B. Thiruviraiselvi						
20. R. Maheswari						
21. R. Vani II BSc. IT						
22. P. Raja Rajeshwari						
23. M. Dharmi II BA Eng (SF)						
24. R. Neeralakshmi						
25. R. Lakshmi II BA Eng (SF)						
26. R. Anitha						
27. P. Chitra						
28. K. Anitha						

No. of Present 25 18 15 11 10 2 10  
 Signig Staff 20/6 14/6 10/6 10/6 5/6 5/6 10/6

Signature of Co-ordinator: K. Anitha

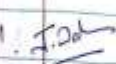
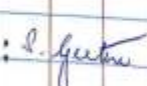
Signature of H.O.D : S. Anitha

PRINCIPAL

2016

## BEC Vantage

	KM	JN	MS	MS	AP	JN
	6/6/16	7/6/16	8/6/16	9/6/16	10/6/16	29/6/16
1. B. Sakana. <sub>III Eng (R)</sub>	1	1	1	1	1	1
2. C. Mercy Priyadharshini <sub>III Eng (R)</sub>	1	1	1	1	1	1
3. Jasmine Jeya Malai K. <sub>III Eng (R)</sub>	1	1	1	1	1	1
4. M. Sumitha Plessy <sub>III Eng (R)</sub>	1	1	1	1	1	1
5. S. Subashini <sub>III CS</sub>	1	1	1	1	1	1
6. S. Rabenta Princesse <sub>III CS</sub>	1	1	1	1	1	1
No. of Present	6	6	5	4	6	6
Sign. of Staff						

Signature of Co-ordinator: K. Signature of H.O.D: S. 

Principal

PRINCIPAL

B.E. - Preliminary & Vantage  
Training Programme  
Batch - II

S.No	Name of the Student	Class	10/11/16	14/11/16
1.	P. Shanthini	B.A. Eng (SF)	1	1
2.	T. Nicholas Angel Mary	B.E. (Co) SF	1	1
3.	D. Suresh	B.E.A	1	1
4.	G. Lakshmi	B.E. Comp Sci	a	a
5.	G. Henna	"	1	1
6.	P.A. Krishna Prabha	B.E. Physic	1	1
7.	R. Santhiya	"	1	1
8.	C.P. Akhaya	"	1	1
9.	K. Selvalakshmi	B.E. Maths	1	1
10.	S. Meenakshi	"	1	1
11.	M. Saranya	B.E. Mat (Co)	1	1
12.	R. Vani	B.E. IS	1	1
13.	P. Raja Rajeshwari	"	1	1
14.	D. Padmini	"	1	1
15.	H. Priyadarshini	B.A. Eng (R)	1	1
16.	S. Sakka	"	1	1
17.	T. Trish Dorothy	"	1	1
18.	V. Shubane	"	1	1
19.	D. Syedali Fatima	"	1	1
20.	A. Lalithambika	"	1	1
21.	K. Ahuna	"	1	1
22.	R. Neethi Vani	"	1	1
23.	A. Gowayya	"	1	1
24.	M. Shreeranga Priya	"	1	1
25.	A. Khavaya	"	1	1
26.	L. Kannak Sheela	"	1	1
27.	N. Suguna	"	1	1

28.	S. Tanavi	B.A. Eng (R)	1	1
29.	S. Nivinaiselvi	"	1	1
30.	R. Maheswari	"	1	1
31.	S. Sakana	B.A. Eng (R)	1	1
32.	C. Mercy Priyadarshini	"	1	1
33.	K. Jathina Jeba Malai	"	1	1
34.	M. Sunitha Rassy	"	1	1
35.	S. Sudashini	B.E. Comp Sci	1	1
36.	S. Reemata Princes	"	1	1
37.	A. Angelilla Jeanne Devika	SM & Eng	1	1
38.	R. Tothi Rathi Bai	M.Phil (Eng)	1	1

No. of Students Present : 37 36

Name of the trainer : Mr. Randy Wilkins

Signature of the co-ordinator : *[Signature]*  
Tol

Signature of the HOD : *[Signature]*

*[Signature]*

PRINCIPAL

B.E. - Preliminary &amp; Vantage

Training Programme

Batch - II

S.No	Name of the Student	Class	15/11/16	16/11/16
1.	P. Shanthini	B.E. Eng (SE)	/	/
2.	T. Niharika Angel Mary	B.E. (CIVIL) SE	/	/
3.	D. Suresh	B.E. CA	/	/
4.	G. Lakshmi	B.E. Sc Comp Sc	/	/
5.	G. Hema	"	/	/
6.	P.A. Krishna Prabha	B.E. Sc Physics	/	/
7.	R. Santhiya	"	/	/
8.	C.P. Akhaya	"	/	/
9.	K. Selvalakshmi	B.E. Sc Maths	/	/
10.	S. Meenakshi	"	/	/
11.	M. Saranya	B.E. Sc (CA)	/	/
12.	R. Vani	B.E. Sc IS	/	/
13.	P. Raja Rajeshwari	"	/	/
14.	D. Padmini	B.E. Eng (R)	/	/
15.	M. Priyadharsini	"	/	/
16.	S. Sakka	"	/	/
17.	T. Trish Dorathy	"	/	/
18.	V. Shubaneer	"	/	/
19.	D. Syedah Fathuma	"	/	/
20.	A. Lalithambika	"	/	/
21.	K. Aruna	"	/	/
22.	R. Neethi Vani	"	/	/
23.	A. Sowmya	"	/	/
24.	M. Shwanga Priya	"	/	/
25.	A. Khanya	"	/	/
26.	L. Hanah Cheebu	"	/	/
27.	N. Suguna	"	/	/

28.	S. Tanani	B.E. Eng (R)	/	/
29.	S. Minisaiselvi	"	/	/
30.	R. Maheswari	"	/	/
31.	B. Sakana	B.E. Eng (R)	/	/
32.	C. Mary Priyadharsini	"	/	/
33.	K. Tahirine Jeba Malai	"	/	/
34.	M. Sunitha Blessy	"	/	/
35.	S. Subashini	B.E. Sc Comp Sc	/	/
36.	S. Reheeta Praveen	"	/	/
37.	A. Angelita Jeanne Devika	B.E. Sc Eng	/	/
38.	R. Tothi Rathi Bai	M.Phil (Eng)	/	/

No. of Students Present : 37 36

Name of the trainer : Mr. Randy Wilkins

Signature of the co-ordinator : *[Signature]*Signature of the HOD : *[Signature]*

Principal

Principal



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),  
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,  
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

**Name of the Department : Department of Botany**  
**Name of the institution/ industry/ corporate house : EHEART ( Eswar Health Education and Research Trust) Eswar Institute of Complimentary and Traditional Medicine, Chennai**

**Institute of Complimentary and Traditional Medicine**  
[Eswar Health Education And Research Trust (EHEART)]  
6/15, Ohri Salai, Mugappair East, Chennai- 600 037.  
Mobile: 9940127201, E-mail: eheart2015@gmail.com Regd.No.:177/2015

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**MEMORANDUM OF UNDERSTANDING**

BETWEEN

*Management of the Standard Fireworks Rajaratnam College For women, Sivakasi*

AND

*Management of EHEART's (Eswar Health Education And Research Trust)  
Institute of Complimentary and Traditional Medicine, Chennai.*

The Memorandum of understanding covers collaboration in the following areas:

1. Conducting and training the course in specific fields jointly.
2. Offering technical consultancy.
3. Utilizing resource persons periodically.

The terms of Memorandum of understanding can be modified with mutual concurrence to suit the changing needs of the future.

The Memorandum of Understanding initially covers a **three years** period from **November 2015 to April 2017**. In case either of the parties decides to terminate the agreement before the said period, one month advance notice is to be given.

Executed on this 25th day of November 2015 (**25.11.2015**) at Sivakasi.

Terms & conditions:

I. Standard Fireworks Rajaratnam college

- Allotted students strength :55
- Teaching hours: 60 hrs/semester.
- Executing all academic facilities for the course.

Payment of tuition fees Rs.500/ for each student to Institute of Complimentary and Traditional Medicine, Chennai.

II. Institute of Complimentary and Traditional Medicine, Chennai.

- Deputing faculty on all Saturdays from 9.30 am -3.15 pm except on second Saturdays during Semester period.
- Setting three sets of question papers for Internal, one set of theory and one set of practical question paper for the End Semester Examination.
- Valuing answer scripts for theory & practical both for internal and End semester Examinations.

*D. Sashreka*  
**D. SASHREKA**  
PRINCIPAL,  
The Standard Fireworks Rajaratnam  
College for Women,  
SIVAKASI.

*Sigga Thy*  
**MANAGING TRUSTEE**  
Institute of Complimentary and Traditional Medicine,  
Chennai  
(Eswar Health Education And Research Trust)







**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),  
SIVAKASI – 626 123.**


(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,  
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

**Name of the Department**

**: Department of Computer Science**

**Name of the institution/ industry/ corporate house : Touch & Touch, Cell Phone Servicing  
and Training institute, Sivakasi**

Cell : 98423 47842



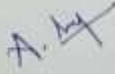
**Touch & Touch**  
The Joy of Learning  
**Institute of Communication Technology**  
Cell Phone Servicing & Training Institute  
62A, North Car Street, Sivakasi -626 123.

Date : 1.11.15

To,  
Dr. Mrs. D. Sasireka,  
The Principal,  
The Standard Fireworks Rajaratnam College for Women,  
Sivakasi.

**MEMORANDUM OF UNDERSTANDING**

We are pleased to sign a MOU with the Department of Computer Science of your esteemed institution with regard to the conduct of a Life oriented course / Self Employed course on Cell phone servicing. We give assurance for quality education and First Class Hands on Experience in the Field. We would also be pleased to provide internship to all the Candidates undergoing the Course and Placement for the Top 2 hand in our Concern.

  
Director  
Touch & Touch  
Institute of Communication Technology





CLASS: IV  
 COURSE CODE & TITLE: 14U124 - Public Place Security  
 COURSE TEACHER: Mr. Sabari Srinivasan, Mrs. L. Srikanthakumari

2014-2015

SNO	Reg No.	NAME	ROLL No	Marks	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1a	14U1201	R. Rajagani	141201	85.0	X	X	X	X	X	X	X	X	X	X	X	X
1b	14U1202	M. Mahalakshmi	141202	*	X	X	X	X	X	X	X	X	X	X	X	X
2a	14U1203	P. Srinivas	141203	*	X	X	X	X	X	X	X	X	X	X	X	X
3a	14U1204	V. Jayanthi	141204	B. Com (FSC)	X	X	X	X	X	X	X	X	X	X	X	X
3b	14U1205	M. Manoj	141205	*	X	X	X	X	X	X	X	X	X	X	X	X
4a	14U1206	M. Manasa Priya	141206	*	X	X	X	X	X	X	X	X	X	X	X	X
4b	14U1207	J. Raja Rajaraj	141207	*	X	X	X	X	X	X	X	X	X	X	X	X
5a	14U1208	M. Akshitha	141208	B. Com (FSC)	X	X	X	X	X	X	X	X	X	X	X	X
5b	14U1209	B. Manika Priya	141209	*	X	X	X	X	X	X	X	X	X	X	X	X
6a	14U1210	P. Rajakumari	141210	*	X	X	X	X	X	X	X	X	X	X	X	X
6b	14U1211	P. Saritha & Saranika	141211	*	X	X	X	X	X	X	X	X	X	X	X	X
7a	14U1212	M. Shreya	141212	*	X	X	X	X	X	X	X	X	X	X	X	X
8a	14U1213	J. Indumathi	141213	*	X	X	X	X	X	X	X	X	X	X	X	X
8b	14U1214	S. Yamuna Devi	141214	*	X	X	X	X	X	X	X	X	X	X	X	X
9a	14U1215	G. Bhuvanashree	141215	B.Com	X	X	X	X	X	X	X	X	X	X	X	X
9b	14U1216	G. Jayashree	141216	*	X	X	X	X	X	X	X	X	X	X	X	X
10a	14U1217	E. Lakshmi Priya	141217	*	X	X	X	X	X	X	X	X	X	X	X	X
10b	14U1218	A. Anasuya	141218	Marketing & Distribution	X	X	X	X	X	X	X	X	X	X	X	X
11a	14U1219	M. Karthika Viji	141219	Diploma	X	X	X	X	X	X	X	X	X	X	X	X
11b	14U1220	A. Lathika Priya	141220	*	X	X	X	X	X	X	X	X	X	X	X	X
12a	14U1221	E. Shama Rajan	141221	*	X	X	X	X	X	X	X	X	X	X	X	X
12b	14U1222	A. Sruja	141222	*	X	X	X	X	X	X	X	X	X	X	X	X
13a	13U1201	C. Anika	131201	B.Com - Nizam	X	X	X	X	X	X	X	X	X	X	X	X

Course Teacher Signature: *[Signature]*  
 Signature of HOD: *[Signature]*  
 Signature of Coordinator: *[Signature]*  
 Signature of Principal: *[Signature]*

*[Handwritten signatures and marks in the right column of the table]*



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),  
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,  
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

**Name of the Department**

**: Department of Physics**

**Name of the institution/ industry/ corporate house : Materials Research Centre, Coimbatore**

**MEMORANDUM OF UNDERSTANDING**

**BETWEEN**



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE  
FOR WOMEN (AUTONOMOUS), SIVAKASI**

**AND**

**MATERIALS RESEARCH CENTER,  
COIMBATORE**

## **DRAFT OF MEMORANUM OF UNDERSTADING**

This *Memorandum of Understanding* is executed

Between

**Management of The Standard Fireworks Rajaratnam College for Women, Sivakasi**

AND

**Director, Materials Research Center, Coimbatore**

The Memorandum of Understanding covers **collaboration** in the following areas:

1. Conducting jointly the course and training in specific fields.
2. Offering technical consultancy.
3. Utilizing resource persons periodically.
4. Organizing short term training programmes.
5. Any other activities that are deemed fit.

The specific activities and cost of same would be worked out in detail keeping in mind the interest of both the parties.

The terms of Memorandum of Understanding can be modified with mutual concurrence to suit the changing needs of the future as when such changes are warranted.

The Memorandum of Understanding initially covers a five years period from **September 2014 to August 2019**. In case either of the parties decides to terminate the agreement before the said period, one month advance notice to be given.

Executed on the 1<sup>st</sup> day of September 2014 at Sivakasi.

S. Selvaschavapandian  
DIRECTOR

DR. S. SELVASEKARAPANDIAN  
DIRECTOR  
MATERIALS RESEARCH CENTER  
200 - A, THIRUVALLUVAR NAGAR,  
RAMANATHAPURAM,  
COIMBATORE - 641 045, INDIA

*Basireha*

PRINCIPAL  
PRINCIPAL  
The Standard Fire Works  
Rajaratnam College for Women,  
SIVAKASI.

1. Witness : *N. Ujaya*  
Head of the Dept. of Physics  
S.F.R. College for Women, Sivakasi.

2. Witness *Dr. G. Kalithumbar*  
Subramaniam Thangalathar  
Educational Trust  
Member

## RESEARCH PUBLICATIONS

### Impedance studies of a green blend polymer electrolyte based on PVA and Aloe-vera

S. Selvalakshmi, T. Mathavan<sup>1</sup>, N. Vijaya<sup>2</sup>, Selvasekarapandian, M. Premalatha, and S. Monisha

Citation: *AIP Conference Proceedings* **1731**, 140044 (2016); doi: 10.1063/1.4948210

View online: <http://dx.doi.org/10.1063/1.4948210>

View Table of Contents: <http://aip.scitation.org/toc/apc/1731/1>

Published by the *American Institute of Physics*

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## Impedance Studies Of A Green Blend Polymer Electrolyte Based On PVA And Aloe-Vera

S.Selvalakshmi<sup>1</sup>, T.Mathavan<sup>\*1</sup>, N.Vijaya<sup>\*2</sup>, Selvasekarapandian<sup>3,4</sup>,  
M.Premalatha<sup>1,4</sup>, S.Monisha<sup>1,4</sup>

<sup>1</sup>Department of Physics, N.M.S.S.V.N College, Nagamalai, Madurai, Tamilnadu.

<sup>2</sup>Department of Physics, The S.F.R. College for Women, Sivakasi, Tamilnadu.

<sup>3</sup>Department of Nano Science and Technology, Tamilnadu Agricultural University,  
Coimbatore, Tamilnadu.

<sup>4</sup>Materials Research Centre, Coimbatore, Tamilnadu.

\*Corresponding authors: [tjmathavan@gmail.com](mailto:tjmathavan@gmail.com) [viij\\_phy\\_sfr@yahoo.co.in](mailto:viij_phy_sfr@yahoo.co.in)

**Abstract.** The development of polymer electrolyte materials for energy generating and energy storage devices is a challenge today. A new type of blended green electrolyte based on Poly(vinyl alcohol (PVA) and Aloe-vera has been prepared by solution casting technique. The blending of polymers may lead to the increase in stability due to one polymer portraying itself as a mechanical stiffener and the other as a gelled matrix supported by the other. The prepared blend electrolytes were subjected to Ac impedance studies. It has been found out that the polymer film in which 1 gm of PVA was dissolved in 40 ml of Aloe-vera extract exhibits highest conductivity and its value is  $3.08 \times 10^{-4} \text{ S cm}^{-1}$ .

**Keywords:** PVA, Aloe-vera, Ac impedance

### INTRODUCTION

Ionic conductors are key components for many electrochemical applications, mainly in the field of energy conversion, for example, in photo-electrochemical (PEC) solar cells and fuel cells, in energy storage devices like batteries and in other technological applications like electro-chromic devices, super-capacitors, electrochemical sensors [1]. Several synthetic polymer hosts for solid polymer electrolyte application have been developed in the past, such as poly(ethylene oxide) [2], poly(propylene oxide) [3], poly(acrylonitrile) [4], poly(methyl methacrylate) [5], poly(vinyl chloride) [6], poly(vinylidene fluoride) [7], and poly(vinyl alcohol) [8]. The use of synthetic polymers has drawn much criticism lately due to their complicated synthesis, high costs, and safety issues [9]. To avoid these problems, the interests have been shifted over to biodegradable, abundantly available, non-toxic biopolymers or natural polymers. One such natural polymer is aloe-vera. Pharmaceutical studies like anti-fungal and anti-bacterial studies have been done for aloe-vera. The impedance study of the Aloe-vera leaves has been reported to evaluate the health status of the plant [10]. In the present study, solid blend polymer electrolyte based on PVA and Aloe-vera has been synthesised and impelled to impedance studies for device application. Blending of polymers is the

most viable approach for the preparation of polymer electrolytes which has been adopted in this research work. Polyvinyl alcohol (PVA) has excellent film forming, emulsifying and adhesive properties. PVA is non-toxic and has high tensile strength and flexibility. The gel present in the leaf of Aloe-vera has electrical properties and it can generate electricity [11]. PVA having high tensile strength can act as a mechanical stiffener and Aloe-vera extract serves as the gelled matrix in the electrolyte. The prepared green polymer electrolyte was characterized by ac impedance spectroscopy.

### Experimental Details:

One gram of Poly vinyl alcohol (PVA) was dissolved in different quantity of Aloe-vera extract to formulate the green blend polymer films. The amount of PVA was kept fixed as 1 gm and the volume of Aloe-vera extract was taken as 10 ml, 20 ml, 30 ml, 40 ml, 50 ml and 60 ml.

The gel present in the leaf of Aloe-vera was detached and was crushed finely in the mixer. The gelatinous solution was double filtered and 1 gm of PVA was added to the extract. The mixture was magnetically stirred continuously for 36 hours

## Vibrational, Electrical and Optical Studies on Pectin- based Polymer Electrolyte

S.Kavitha<sup>1</sup>, N.Vijaya<sup>1</sup>, R.Pandeeswari<sup>1</sup>, M.Premalatha<sup>2</sup>

<sup>1</sup>Department of Physics, S.F.R. College for Women, Sivakasi-626123, Tamil Nadu, India

<sup>2</sup>Materials Research Center, Coimbatore-641045, Tamil Nadu, India

**Abstract** - This work presents the synthesis and characterization of biopolymer pectin - based polymer electrolyte. Proton conducting polymer electrolytes consisting of pectin as host polymer and ammonium nitrate ( $NH_4NO_3$ ) as complexing salt in different compositions have been prepared by solution casting technique using distilled water as solvent and characterized by FTIR, AC impedance spectroscopy and UV-Visible spectral analyses. The FTIR analysis reveals complexation behaviour of the electrolytes. The ionic conductivity of pure pectin is found to be  $5.15 \times 10^{-4} S cm^{-1}$  at ambient temperature. The highest conductivity of  $6.64 \times 10^{-2} S cm^{-1}$  has been obtained for the polymer electrolyte with 70 mol% pectin and 30 mol%  $NH_4NO_3$  at ambient temperature. The conductivity of the electrolyte increases with increasing temperature for all compositions. UV-Visible analysis indicates that the bandgap energy decreases with the addition of  $NH_4NO_3$ .

**Key Words:** biopolymer, FTIR, Ionic conductivity, activation energy, modulus spectra, band gap energy.

### 1. INTRODUCTION

Solid polymer electrolytes (SPEs) are an important class of materials due to its application for the development of fuel cells, solid state batteries, sensors and electrochemical devices [1]. SPEs have the dimensional stability, processability, flexibility, electrochemical stability, safety and long life. So it is anticipated to replace the established organic sol-gel electrolyte [2]. Most of the SPEs have been developed using synthetic polymers, such as PVA [2], PVP [3], PAN [4], etc. The proton-conducting polymer electrolytes have received a great deal of interest because of their unique application as solid electrolytes in the electrochemical devices.

Recently, research on new materials from renewable sources as the possible electrolyte host has grown vigorously, since synthetic polymers are obtained from finite sources and are harmful to the environment. Natural polymers are well known for their biodegradation properties, richness in nature and low cost. The use of natural polymers in electrolytes could overcome the main shortcoming of synthetic ones, which are mostly insoluble in the solvents [5]. Generally, the addition of inorganic salts into a polymer matrix can improve its conductivity. The

biopolymer pectin is a polymer of natural origin. Because of its excellent biodegradable and biocompatible nature, it is used for eco-friendly biodegradable applications in the pharmaceutical and biotechnology industry. It has been used successfully for many years in the food and beverage industry as a thickening agent, a gelling agent and a colloidal stabilizer. Pectin is commercially extracted from different citrus products like apple, pomace, and oranges under mildly acidic conditions [6]. It consists chiefly of partially methoxylated polysaccharide. It is water soluble with fairly good bio-degradable nature which can be exploited for designing polymer films. Ammonium salts are very good proton donors as per the literature survey [7]. Ammonium nitrate ( $NH_4NO_3$ ) is a white crystalline solid at room temperature and pressure. Commonly, it is used in agriculture as fertilizer [8]. The present study is focused on the preparation and characterization of pectin doped with  $NH_4NO_3$  polymer electrolyte films.

### 2. EXPERIMENTAL

Polymer electrolytes have been prepared with pectin (Tokyo Chemical Industry Co Limited, Japan) and  $NH_4NO_3$  (Spectrum, India) of various compositions such as (100:0), (90:10), (80:20), (70:30), and (60:40) in molar ratios using distilled water as solvent by solution casting technique. Appropriate quantities of pectin and  $NH_4NO_3$  are dissolved in distilled water and the mixtures are stirred continuously in a magnetic stirrer for two days to get homogeneous solution. Finally, these solutions are casted in polypropylene petri dishes and evaporated at 50 °C in hot air oven. Free standing films of thickness of 0.003833-0.0098 cm have been obtained after 24 hours.

The FTIR spectra for polymer electrolytes have been recorded in transmission mode using a SHIMADZU-IR AFFINITY-1 spectrophotometer in the frequency range (400 - 4000  $cm^{-1}$ ). The electrical measurements have been performed on the electrolyte films in the frequency range of 42 Hz - 1 MHz by applying 1 V sinusoidal signal over the temperature range from 303 K to 333 K by sandwiching them between aluminum blocking electrodes using HIOKI 3532 - 50 LCR HI-Tester interfaced with a computer. The UV-Vis spectra are obtained from the UV-2400 PC series spectrometer for the samples within 200-900 nm range of UV spectrum.





## Proton-conducting biopolymer electrolytes based on pectin doped with $\text{NH}_4\text{X}$ ( $\text{X}=\text{Cl}, \text{Br}$ )

N. Vijaya<sup>1</sup> · S. Selvasekarapandian<sup>2</sup> · M. Sornalatha<sup>2</sup> · K.S. Sujithra<sup>2</sup> · S. Manisha<sup>2</sup>

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**Abstract** Research has been undertaken to develop polymer electrolytes based on biodegradable natural polymers such as cellulose acetate, starch, gelatin, and chitosan, which are being used as polymer hosts for obtaining new polymer electrolytes for their applications in various electrochemical devices such as batteries, sensors, and electrochromic windows. Pectin is a naturally available material which is extracted from the skins of citrus fruits. Pectins, also known as pectic polysaccharides, are rich in galacturonic acid. The present study focuses on the proton-conducting polymer electrolytes based on the biopolymer pectin doped with ammonium chloride ( $\text{NH}_4\text{Cl}$ ) and ammonium bromide ( $\text{NH}_4\text{Br}$ ) prepared by solution casting technique. The prepared membranes are characterized using XRD, FTIR, and AC impedance techniques to study their complexation behavior, amorphous nature, and electrical properties. The conductivity of pure pectin membrane has been found to be  $9.41 \times 10^{-7} \text{ S cm}^{-1}$ . The polymer systems with 30 mol%  $\text{NH}_4\text{Cl}$ -doped pectin and 40 mol%  $\text{NH}_4\text{Br}$ -doped pectin have been found to have maximum ionic conductivity of  $4.52 \times 10^{-6}$  and  $1.07 \times 10^{-5} \text{ S cm}^{-1}$ , respectively. The conductivity value has increased by three orders of magnitude compared to pure pectin membrane. The dielectric behavior of both the systems has been explained using dielectric permittivity and electric modulus spectra.

**Keywords** Biopolymer · Polymer electrolyte · Amorphous · Ionic conductivity · Dielectric permittivity

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### Introduction

Polymer electrolytes play an important role as solid electrolyte in solid state devices. Polymer electrolytes have several advantages over their liquid counterparts such as reduced weight, no internal shorting, no leakage of electrolyte and non-combustible reaction products at the electrode surface, mechanically stable, and very flexible for packaging. An extensive research has been carried out to develop polymer electrolytes with appreciable ionic conductivity at room temperature, good mechanical and thermal stability in order to utilize them for solid state applications. Most of the polymer electrolytes have been developed using synthetic polymers such as poly(ethylene oxide) (PEO), poly(vinyl alcohol) (PVA), poly(vinyl pyrrolidone) (PVP), and poly(ethylene glycol) (PEG) for their applications in various electrochemical devices. Proton-conducting polymer electrolytes have their possible applications in various electrochemical devices such as batteries, fuel cells, supercapacitors, and electrochromic windows [1–4]. Recently, research is being undertaken to produce products from naturally available materials to avoid the environmental issues in the field of polymer electrolytes. Biodegradable natural polymers that have already been used among others are polysaccharides like cellulose acetate [5, 6], starch [7–9], gelatin [10, 11], and chitosan [12–14] for obtaining new polymer electrolytes for their applications in various electrochemical devices. Biopolymer agar-based electrolytes [15–17] have also been reported.

Pectin, a naturally available material, is a polysaccharide that is largely present in the cell wall of plants [18]. Pectins, also known as pectic polysaccharides, are rich in galacturonic acid. Homogalacturonan is a linear chain of 1,4-linked  $\alpha$ -D-galactopyranosyluronic acid residues, in which some of the carboxyl groups are methyl esterified [19]. At present, apple pectin and citrus pectin are the main sources of commercially



## Review

## Investigations on proton conducting biopolymer membranes based on tamarind seed polysaccharide incorporated with ammonium thiocyanate



M. Premalatha<sup>a,b</sup>, T. Mathavan<sup>a,\*</sup>, S. Selvaselvarajapandian<sup>b,c</sup>, S. Monisha<sup>a,b</sup>, D. Vinodh Pandi<sup>c</sup>, S. Selvalakshmi<sup>b,d</sup>

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## ABSTRACT

Naturally available materials such as biopolymers and polysaccharides have gained much attention in the development of polymer electrolytes due to its biodegradability, film forming nature and non-toxicity. The proton conducting biopolymer membranes have been prepared by polysaccharides, tamarind seed polysaccharide (TSP) with different concentrations of ammonium thiocyanate ( $\text{NH}_4\text{SCN}$ ) as dopant. Distilled water has been used as a solvent and solution casting technique has been employed to prepare the biopolymer membranes. The prepared biopolymer membranes have been characterized by different techniques such as X-ray diffraction (XRD), Fourier transform infrared (FTIR) spectroscopy, differential scanning calorimetry (DSC), AC-impedance spectroscopy and transference number measurement (TNM). From XRD results, the crystalline or amorphous nature of the biopolymer membranes with increasing salt concentration ( $\text{NH}_4\text{SCN}$ ) has been studied. The complex formation between the biopolymer-TSP and  $\text{NH}_4\text{SCN}$  has been investigated by FTIR analysis. The glass transition temperature of the prepared biopolymer membranes has been found using DSC technique. The highest conductivity is  $2.85 \times 10^{-4} \text{ S cm}^{-1}$  for the composition of 1 g TSP: 0.4 g  $\text{NH}_4\text{SCN}$  at ambient temperature, which has been obtained by AC-impedance spectroscopic studies. The conduction of ions within the biopolymer membrane has been confirmed by TNM. The primary proton battery has been constructed with the highest conducting membrane 1 g TSP: 0.4 g  $\text{NH}_4\text{SCN}$ . Its open circuit voltage is 1.51 V. The discharge characteristics of the battery for a load 1 k $\Omega$  has been explained. The present investigation confirms that the  $\text{NH}_4\text{SCN}$  doped TSP biopolymer membrane has got the essential properties required for the electrochemical device applications.

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## Biopolymer agar-agar doped with $\text{NH}_4\text{SCN}$ as solid polymer electrolyte for electrochemical cell application

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**ABSTRACT:** A new polymer electrolyte based on the biopolymer Agar-Agar doped with ammonium thiocyanate ( $\text{NH}_4\text{SCN}$ ) has been prepared and characterized by FTIR analysis, X-ray diffraction measurements, AC impedance spectroscopy, transference number measurements, and DSC analysis. The Fourier transform infrared analysis confirms the complex formation between agar and  $\text{NH}_4\text{SCN}$ . The amorphous nature of the polymer electrolyte has been revealed from X-ray diffraction analysis. The highest ionic conductivity has been observed for the sample of composition 1:1 between Agar and  $\text{NH}_4\text{SCN}$ . As a function of temperature, the ionic conductivity of this sample exhibits Arrhenius behavior increasing from  $1.03 \times 10^{-5} \text{ S cm}^{-1}$  at ambient temperature to  $3.16 \times 10^{-2} \text{ S cm}^{-1}$  at 343 K. The transference number has been estimated by the dc polarization method, and it has been proven that the conducting species are predominantly cations. Using the highest conductivity polymer electrolyte, solid state electrochemical cell has been fabricated and cell parameters are reported. © 2017 Wiley Periodicals, Inc. *J. Appl. Polym. Sci.* 2017, 134, 44702

**KEYWORDS:** amorphous; biodegradable; dielectric properties; differential scanning calorimetry; glass transition

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### INTRODUCTION

A significant change is occurring in the global polymer industries. Development of a new generation of biobased polymers, polymers derived from renewable resources, is progressing rapidly. In this polymers-based world, there are many applications for energy generation and storage where plastics are used with fabrication and are not eco-friendly. The widespread usage of such products has produced toxic pollution. The commercial batteries and electronic devices that we use today employ electrolytes which are high in conductivity, but are hazardous and nonbiodegradable, resulting in a great menace to the environment and living species.<sup>1</sup> Since two decades, different polymer electrolyte systems have been extensively studied and most of them are based on poly(ethylene oxide),<sup>2</sup> poly(vinyl pyrrolidone),<sup>3</sup> poly(vinyl alcohol) (PVA),<sup>4</sup> poly(acrylonitrile),<sup>5</sup> poly(methyl methacrylate),<sup>6</sup> poly(vinyl chloride),<sup>7</sup> and other synthetic polymers.

Recently, researchers all over the world have started focusing on proton conducting polymer electrolyte for energy storage devices.<sup>8–11</sup> Additionally, they have started to prepare eco-friendly biodegradable biobased polymer electrolytes.<sup>12–15</sup> The biobased polymers are the polymers derived from the naturally occurring renewable sources. These bio-based polymer electrolytes are

electrically efficient, cost-effective, and eco-friendly. These advantages have made the biobased polymer electrolytes a promising substitute for synthetic polymers in fuel cells. These electrolytes are also used in solid state devices, electrochromic devices and dye sensitized solar cells.<sup>16</sup>

Among natural polymers, polysaccharides are the best candidates due to their film forming capability and abundance in nature.<sup>17</sup> Starch, cellulose, chitosan, and agar-agar are some of the natural polymers. Noor and Iqbal<sup>18</sup> have reported proton conductivity value of  $6.48 \times 10^{-5} \text{ S cm}^{-1}$  for carboxymethyl cellulose doped with ammonium thiocyanate. Elbar and Arafat<sup>19</sup> have reported conductivity value of  $3.89 \pm 0.79 \times 10^{-5} \text{ S cm}^{-1}$  for Starch/Chitosan- $\text{NH}_4\text{NO}_3$  polymer electrolyte. Ng and Mohamad<sup>20</sup> have presented proton conductivity value of  $9.93 \pm 1.90 \times 10^{-5} \text{ S cm}^{-1}$  for plasticized Chitosan doped with  $\text{NH}_4\text{NO}_3$ . Proton conductivity value of  $1.02 \times 10^{-3} \text{ S cm}^{-1}$  for Cellulose acetate/ $\text{NH}_4\text{NO}_3$  has been reported by Monisha *et al.*<sup>21</sup> Biopolymer electrolyte based on Cellulose acetate in combination with  $\text{NH}_4\text{SCN}$  exhibiting proton conductivity of  $3.31 \times 10^{-5} \text{ S cm}^{-1}$  has been reported by Monisha *et al.*<sup>22</sup> The loosely bound proton of the ammonium ion is responsible for conductivity in these polymer complexes. It is observed that the ionic radii of  $\text{NO}_3^-$  and  $\text{SCN}^-$  are 1.96 Å and 1.93 Å, respectively, with meagre difference and hence doping

## Characterization of proton conducting blend polymer electrolyte using PVA-PAN doped with $\text{NH}_4\text{SCN}$

M. Premalatha, T. Mathavan<sup>\*</sup>, S. Selvasekarapandian, F. Kingslin Mary Genova<sup>\*</sup>, and R. Umamaheswari

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# Characterization of proton conducting blend polymer electrolyte using PVA-PAN doped with $\text{NH}_4\text{SCN}$

M.Premalatha<sup>1,2</sup>, T. Mathavan<sup>1,\*</sup>, S.Selvasekarapandian<sup>2</sup>, F.Kingslin Mary Genova<sup>3,\*</sup>, R.Umamaheswari<sup>3</sup>

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**Abstract.** Polymer electrolytes with proton conductivity based on blend polymer using polyvinyl alcohol (PVA) and poly acrylo nitrile (PAN) doped with ammonium thiocyanate have been prepared by solution casting method using DMF as solvent. The complex formation between the blend polymer and the salt has been confirmed by FTIR Spectroscopy. The amorphous nature of the blend polymer electrolytes have been confirmed by XRD analysis. The highest conductivity at 303 K has been found to be  $3.25 \times 10^{-3} \text{ S cm}^{-1}$  for 20 mol %  $\text{NH}_4\text{SCN}$  doped 92.5PVA.7.5PAN system. The increase in conductivity of the doped blend polymer electrolytes with increasing temperature suggests the Arrhenius type thermally activated process. The activation energy is found to be low (0.066 eV) for the highest conductivity sample.

**Keywords:** FTIR, XRD, AC impedance, activation energy

## INTRODUCTION

In the field of electrochromic energy devices such as batteries, fuel cells etc., proton conducting polymer electrolytes play a essential role because of its mechanical and electrical properties [1]. Various methods have been adopted to improve the electrical, mechanical and electrochemical properties of polymer electrolytes. Among the various methods, Polymer blending is the most promising way to improve these properties which is a mixture of structurally different polymers. There are many reports available based on PVA-PVP [2], P(VdF-HEP)-PVAc[3], PVAc-PMMA[4], PVdF-PMMA[5] and so on. PVA is a semi crystalline polymer containing hydroxyl group attached to methane carbons which can be a source of hydrogen bonding. PAN is a synthetic, semi crystalline organic polymer resin which is a common substitute for wool in clothing and home furnishings. It is already reported that the molecular weight of 92.5%PVA: 7.5% PAN exhibits the conductivity of  $1.13 \times 10^{-7} \text{ S cm}^{-1}$  at room temperature [6]. In this work, proton conducting polymer blend electrolyte based on PVA-PAN doped with ammonium thiocyanate ( $\text{NH}_4\text{SCN}$ ) is synthesized and characterized. Ammonium salts have already been reported as a good proton donors to the polymer matrix [7].

## EXPERIMENTAL TECHNIQUE

Blend polymer electrolytes are prepared with optimized compositions of 92.5% PVA(MW 1,25,000): 7.5 % PAN (MW 1,40,000) and various compositions of ammonium thiocyanate using dimethyl formamide (DMF) as solvent by solution casting technique. 92.5% weight of PVA is stirred in DMF at 60°C for 3 hours and after its complete dissolution, 7.5 % weight of PAN is added and stirred for 2 hours after which the ammonium salt is added. The mixture is stirred till it becomes homogeneous. Then it is poured in the petri dish and evaporated at 60°C in vacuum oven. Free standing film is obtained after 48 hours. Films obtained with 5 mol%, 10mol %, 15 mol%, 20mol% and 25mol % by weight of ammonium thiocyanate. Then the film is carefully removed from the petridish and sealed in an airtight cover. Then the prepared films were subjected to Fourier transform infrared spectroscopy (FTIR) using SHIMADZU-IR. Affinity-1 spectrophotometer. The XRD patterns were recorded at room temperature using a XPERT-PRO Diffractometer with  $\text{CuK}\alpha$  radiation at 40 KV and 30 mA in the  $2\theta$  range of  $10^\circ$ - $80^\circ$ . The electrical properties of the films were



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),  
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,  
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

**Name of the Department : Department of Computer Science**  
**Name of the institution/ industry/ corporate house : Bala Tips Software Pvt. Ltd., Sattur**

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Rtn. PP.S. BALAMURUGAN  
B.Sc., CS., B.Ed., M.C.A., M.B.A., PGDCA,  
DIRECTOR

Date :  
01.06.2013

To  
Dr. Mrs. D. Sasireka,  
The Principal,  
The Standard Fireworks Rajaratnam College for Women,  
Sivakasi.

**MEMORANDUM OF UNDERSTANDING**

We are pleased to sign a MOU with the Department of Computer Science of your esteemed institution from 1<sup>st</sup> June 2013 to 31<sup>st</sup> May 2018 with regard to the conduct of a Life oriented course / Self Employment course on Tally Packages and Other Computer Courses. We give assurance for quality education and First Class Hands on Experience in the Field. We would also be pleased to provide internship to all the Candidates undergoing the Course and Placement for the Top 2 hand in our Concern.



Best Regards,  
  
Director  
BALA TIPS SOFTWARE (P) LTD.,  
(ISO 9001 - 2008 CERTIFIED)  
152, Main Road,  
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## THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),

SIVAKASI – 626 123.

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,  
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

**Name of the Department** : Department of Mathematics  
**Name of the institution/ industry/ corporate house** : Viruthunagar District Cluster of  
Colleges Joint Faculty Programme in  
Mathematics

### Viruthunagar District Cluster of Colleges Joint Faculty Programme in Mathematics

#### Memorandum of Understanding

This Memorandum of understanding entered into 20<sup>th</sup> June 2011 between the Principals of all Arts and Science Colleges in Viruthunagar District affiliated to Madurai Kamaraj University, Madurai.

#### List of Colleges:

1. S.F.R.College for Women, Sivakasi (Co-ordinator)
2. A.N.J.A.College, Sivakasi.
3. V.H.N.S.N.College, Viruthunagar.
4. V.V.V. College for Women, Viruthunagar.
5. S.R.N.M.College,Sattur.
6. S.B.K.College, Aruppukottai.
7. Devanger Arts College, Aruppukottai.
8. Sri Kaliswari College, Sivakasi.
9. Rajapalayam Rajas' College, Rajapalayam.
10. A.K.D.R.College for Women, Rajapalayam.
11. V.P.M.M.College for Women, Krishnankottai.
12. Kalasalingam Arts and Science College, Krishnankottai.

Where as the colleges herein they are mutually agreed to enter into the organisation of a programme named as "The Viruthunagar District Cluster of Colleges Joint Faculty Programme in Mathematics" and further decided to make into writing of this document for better understanding and pursuing programme in their colleges.

#### The Details are as follows:

- The Standard Fireworks Rajaratnam College for Women, Sivakasi, will be the co-ordinator for this programme.
- In the beginning of every academic year HODs of Department of Mathematics in all the member colleges will meet at S.F.R.College for Women, Sivakasi during the month of June to chalk out the programmes for that academic year.
- Each College will take care of one programme in that academic year.
- In the absence of HODs, any senior faculty member from the Department should attend the meeting.
- The Programmes will be conducted only on afternoon of Saturdays.
- All or atleast a minimum of five II PG students accompanied by faculty members from the colleges will attend the programmes without fail, M.Phil students can also join.
- Teaching faculty from those colleges which do not offer PG course in Mathematics may attend all the programmes.
- One day programme can be arranged only once in every year and the member colleges can use this opportunity in rotation. Only for this programme, the registration fee of Rs.50/- can be collected from the students. No registration fee for any other programme conducted under the banner of "Viruthunagar District Cluster of Colleges Joint Faculty Programme in Mathematics".
- All the programmes are students oriented – inter collegiate quiz, guest lectures, paper presentation by the students, mathematical rangoli, dumb-C, model display and other innovative useful programmes.

- Occasionally exhibitions or model display may be conducted in any one of the colleges and students from other colleges (UG & PG) and schools and public in Virudhunagar district may be the viewers.
- To create awareness of the great Indian Mathematician Srinivasa Ramanujan, every year one inter collegiate programme may be conducted in any one of the member colleges during the Birth Anniversary of Ramanujan (during December).
- At the end of the academic year, valedictory function will be conducted in any one of the member college. In that programme feed back regarding the programmes conducted in the concerned academic year will be collected from the students and faculty and it will be scrutinized in the next HODs meeting.
- In case of retirement of any HOD, the college concerned will conduct a cluster college programme on its premises to felicitate the retired HOD. HODs or atleast few faculty members from other member colleges must attend the meeting.
- New colleges in Virudhunagar district can register as members in this organisation as and when they launch UG / PG course in Mathematics.
- Exit Policy: If any college feels like withdrawing their membership from this organisation they must inform the matter to the Principal of S.F.R.college, Sivakasi in the end of the academic year and the same will be discussed in the HODs meeting at S.F.R.College, Sivakasi during June of the next academic year to pass a resolution on it.

This memorandum of understanding is agreed upon by the Principals of all the member colleges. In witness thereof the Principals of all the colleges have signed on the date above mentioned.

1. For S.F.R.College for Women, Sivakasi (Co-ordinator)

Principal  
S.F.R.College for Women  
Sivakasi

*D. Srinivasan*  
20/6/11  
PRINCIPAL  
The Standard Fireworks  
Rajaratnam College  
For Women  
SIVAKASI



2. For A.N.J.A.College, Sivakasi.

Principal  
A.N.J.A.College  
Sivakasi.

*S. N. Jeyaraj*  
PRINCIPAL  
Ayya Nadar Janaki Ammal College  
SIVAKASI - 626 124.

3. For V.H.N.S.N.College, Virudhunagar.

Principal  
V.H.N.S.N.College  
Virudhunagar.

*V. N. Srinivasan*  
20/6/11  
PRINCIPAL  
V. H. N. S. N. COLLEGE  
VIRUDHUNAGAR



4. For V.V.V. College for Women, Virudhunagar.

Principal  
V.V.V. College for Women  
Virudhunagar.

*R. Srinivasan*  
20.6.11  
PRINCIPAL  
V. V. V. COLLEGE FOR WOMEN  
VIRUDHUNAGAR



## SEMINAR AND GUEST LECTURE

From  
The Principal,  
S.F.R.C.,  
Sivakasi.

To  
The Principals of the Cluster Colleges

Dear Sir / Madam,

Sub : The S.F.R College for Women , Sivakasi. – Cluster of Colleges  
Joint Faculty Programme in Mathematics – Heads of the Department  
Meeting – 2016-17-Reg.

...  
We would like to inform you that the Virudhunagar District Cluster of  
Colleges meet will be held in our college on 2.07.2016. We kindly invite the  
Heads of the Department of Mathematics to attend the Programme . Any other  
staff attending the meeting should come with the information about the activity  
and month.

**Agenda:**  
Planning the Programme schedule for the Academic year 2016-2017.

**Date :** 2.07.2016.  
**Time :** 2.30 p.m  
**Venue :** Room no 23

Thanking You,

*S. Heenakshi*  
H.O.D. of Maths &  
Convener of Cluster of Colleges

*SR*  
PRINCIPAL  
(Co-ordinator)  
Virudhunagar District Cluster of Colleges  
Joint Faculty Programme in Mathematics  
PRINCIPAL  
The Standard Fire Works  
Rajaratnam College for Women,  
SIVAKASI.

Copy to:  
1. The Principals of the Cluster Colleges.  
2. The Heads of the Department of Mathematics of the Cluster Colleges.

To  
The Head,  
Department of Mathematics,  
A.K.D.R. College,  
Rajapalayam.

Dear Madam,

**Sub:** Intimation of the number of students attending the Cluster Programme at your College on 6.8.16.

\* \* \* \*

We are glad to inform you that ~~20~~<sup>20</sup> II M.Sc. Maths students accompanied by our staff Mrs.P.Kaliswari, Assistant Professor of Mathematics will attend the "Guest Lecture Programme" arranged under the auspices of VNR district Cluster of Colleges Joint Faculty Programme in Mathematics at your college on 6.8.16.

Thanking You,

Yours truly,

*P. Kaliswari*  
Staff in-charge

*S. Hemabathi*  
HOD

  
PRINCIPAL

**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS), SIVAKASI.**

Affiliated to Madurai Kamaraj University  
Reaccredited with 'A' Grade by NAAC & College with Potential for Excellence by UGC

Mrs. A.Aruna, B.Sc.,  
Secretary



Dr.(Mrs.)D.Sasireka, M.Sc.,M.Phil.,Ph.D.  
Principal

Ref. No. ....

01.09.2016

To  
The Head,  
Department of Mathematics,,  
Sri Ramasamy Naidu Memorial College,  
Sivakasi.

Dear Sir,

**Sub:** Intimation of the number of students attending the Cluster  
Programme at your College on 3.09.2016.

\*\*\*\*

We are glad to inform you that 22 II M.Sc. Maths students accompanied by  
our staff Mrs.U.Muthumari, Assistant Professor of Mathematics will attend the  
'Guest Lecture' arranged under the auspices of VNR district Cluster of Colleges  
Joint Faculty Programme in Mathematics at your college on 3.09.2016.

  
Staff in-charge

  
HOD

  
PRINCIPAL 1/9/16

\* Enrichment with knowledge \* Empowerment of women \*

Phone : 04562 - 220389  
Fax : 04562 - 226695

E-Mail : [sfrc@sfrcollege.org](mailto:sfrc@sfrcollege.org).  
Website : [www.sfrcollege.org](http://www.sfrcollege.org).

To

The Head,  
Department of Mathematics,  
Sri Kaliswari College,  
Sivakasi..

Dear Sir,

**Sub:** Intimation of the number of students attending the Cluster of colleges  
Joint Faculty Programme.

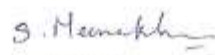
\*\*\*\*\*

We are glad to inform you that 22 II MSc students accompanied by our staff  
Mrs.A.Mydeen Bibi , Assistant Professor of Mathematics will attend the Guest Lecture at your  
college on 07.01.2017 at 2 pm.

Thanking you

Yours truly,

  
Staff-in-charge

  
H.O.D

  
Principal

2

To  
The Head,  
Department of Mathematics,  
AJ College,  
Sivakasi.

Dear Sir,

**Sub:** Intimation of the number of students attending the Cluster  
Programme at your College on 4.2.17.

\*\*\*\*\*

We are glad to inform you that 24 II M.Sc. Maths students and 1 I M.Sc. Maths accompanied by our staff Mrs.SP.Nandhini, Assistant Professor of Mathematics will attend the "Quiz Competition" arranged under the auspices of VNR district Cluster of Colleges Joint Faculty Programme in Mathematics at your college on 4.2.17.

Thanking You,

Encl: List of Participants

Yours truly,

  
Staff in-charge

  
HOD

  
PRINCIPAL

From  
The Principal,  
S.F.R.C,  
Sivakasi.

To  
The Principals of the Cluster Colleges

Dear Sir/Madam,

Sub: The Standard Fireworks Rajaratnam college for women, Sivakasi.  
Cluster of colleges programme- Invitation-Reg.


We are very glad to inform you that the Department of Mathematics of our college has proposed to organize 'Students Seminar' Programme under the auspices of VNR District Cluster of colleges joint Faculty Programme on 18.2.17.


Kindly depute one student of PG Mathematics of your institution to present a paper in any branch of Mathematics. The paper presenters should bring with them a hard copy duly typed in A4 paper & the soft copy. The participants are supposed to be in our campus before 1.45 p.m. Atleast one staff should accompany the students.

We cordially invite all the Faculty and all the students of II PG Mathematics of your college to attend the programme. Kindly forward the number of participants through phone (220389) or e mail (sfrcmaths@gmail.com) on or before 15.2.17.

VENUE : Techno Lab(Administrative Block)

TIME : 2:00 P.M

  
HOD of Maths & Convenor of  
Cluster Colleges

  
PRINCIPAL  
(co-ordinator)  
Virudhunagar District  
cluster of colleges joint faculty  
Programme in Mathematics.

Copy to:

1. The Principals of the Cluster Colleges.
2. The Heads of the Department of Mathematics of the Cluster Colleges.





**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),**

**SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,  
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

**Name of the institution/ industry/ corporate house : Institute of Language Management Pvt. Ltd., Bangalore**

**INDIA NON JUDICIAL**  
**Government of Karnataka**  
**e-Stamp**

  
सत्यमेव जयते

Certificate No.	: IN-KA283402439756470
Certificate Issued Date	: 05-Apr-2016 11:38 AM
Account Reference	: NDNACC (FI)/ kakstci08/ BASAVANAGUDI1/ KA-BN
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For SRI SRISHAILAGIRI SOUHARDHA  
CREDIT CO-OPERATIVE LIMITED

  
Authorized Signatory

Please write or type below this line-----

**MEMORANDUM OF UNDERSTANDING**

This Agreement (hereinafter referred to as MOU) is made and executed on **05-04-2016**.

BY AND BETWEEN

**INSTITUTE OF LANGUAGE MANAGEMENT Pvt. Ltd.**, having its office at # 48/49/50, "Ashok Plaza", 3<sup>rd</sup> Floor, Gandhi Bazaar Main Road, Basavanagudi, Bangalore-560004, represented by its Directors **Ms. Ronila Kalro** and **Mr. Sanjay Subramanya**, (hereinafter referred to as 1<sup>st</sup> Party,

**1<sup>st</sup> Party**  
(Seal & Signature)  
For Institute of Language Management (P) Ltd.  
  
Directors  
CIN: A6728108KAM021111C031097

**2<sup>nd</sup> Party**  
(Seal & Signature)  
  
**Dr. D. SASIREKA**  
PRINCIPAL  
The Standard Fireworks Rajaratnam  
College for Women,  
SIVAKASI.

Page 1

16 / 12 / 2016

**Cautionary Alert:**  
1. The authenticity of this Stamp Certificate should be verified at "www.stampsstamp.com". Any discrepancy in the details in this Certificate will be available on the website renders it invalid.  
2. The onus of checking the legitimacy is on the users of the certificate.  
3. In case of any discrepancy please inform the Competent Authority.

Which term shall mean and include the successors, executors, representatives and assignees on the one Part) and **The Standard Fireworks Rajaratnam College for Women, Thiruthangal Road, Sivakasi – 626 123, Virudhunagar District, Tamil Nadu, represented by its Principal Dr. D Sasireka** (hereinafter referred to as 2<sup>nd</sup> Party, which term shall mean and include the successors, executors, representatives and assignees on the other part).

WHEREAS the 1<sup>st</sup> party herein is engaged in the educational services of teaching / training in colleges according to the syllabus and curriculum of the relevant Board exams which is broadly categorized as under:

- a) ILM'S English Today – English education – speaking, reading and writing skills necessary for the curriculum of the college.
- b) English education art of communicative skills / language skills using recreational activities like drama skills, storytelling skills, role plays, debating skills, drawing, art and crafts, creative writing skills, elocution, language games, puzzles etc taking care to ensure that the Board curriculum is followed broadly by demonstrative, fun, relaxing, enjoyable and practical methods;
- c) ILM will be supporting the college in conducting the assessment / examination in English language proficiency / art of communicative skill / and other test and examinations.

WHERE as the 2<sup>nd</sup> party is an Educational Institution running a government recognized college, is in need of an Educational organization / Institution to train / teach the students in the above mentioned English language education / art of communicative skills / language skills and conducting the examination hence has approached and entrusted the 1<sup>st</sup> party on the following terms and conditions.

**NOW THIS MOU WITNESSTH:**

That both 1<sup>st</sup> and 2<sup>nd</sup> party has hereby agreed for following terms and conditions:

**Education:**

- a) The classes / training will be on an academic year basis (2016-2017) and shall not extend for more than 9 months in a particular academic year (i.e. from 2<sup>nd</sup> week of June 2016 to Last week of March 2017).
- b) The MOU initially is for a period of one academic year and can be extended for further academic years on a renewal basis.
- c) The classes are proposed to be started in the month of 2<sup>nd</sup> week of June 2016 or otherwise as decided by both the parties in writing.
- d) The number of educational classes for the academic year shall be at the rate of 2 (Two) periods per week per section/division/batch.

1<sup>st</sup> Party  
(Seal & Signature)



Page 3

2<sup>nd</sup> Party  
(Seal & Signature)

*D. Sasireka*  
**Dr. D. SASIREKA**  
PRINCIPAL,  
The Standard Fireworks Rajaratnam  
College for Women,  
SIVAKASI.

- e) That the 2<sup>nd</sup> Party shall extend all the support, co-operation to maintain and observe discipline along with maintaining the regular attendance of the students. The 2<sup>nd</sup> party shall also fix the timing of the educational classes with in the college working hours (max 8 hours per day) with the consent of the 1<sup>st</sup> party.
- f) The 2<sup>nd</sup> party will provide / enroll the standard from 1<sup>st</sup> year UG to 2<sup>nd</sup> year UG for the ILM'S training / classes. The total numbers of divisions / sections are **28 (Twenty Eight)**.
- g) The 1<sup>st</sup> party will be deploying its **2 (Two)** trainers / teachers.

**PAYMENTS:**

- a) It is agreed by both the Parties that 1<sup>st</sup> Party shall conduct the above teaching and the total number of students enrolled are determined as **1300 (One Thousand Three Hundred)** subject to enhancement at actual. The 2<sup>nd</sup> party has agreed to pay consolidated fee of **Rs.575/- (Five Hundred Seventy Five)** per student for the academic year 2016-2017 for the educational services being rendered. If for any reason the agreed strength of the students in the MOU gets reduced at any given point of time, the fees will be reworked and increased on a prorate-basis.
- b) It is understood that the total amount herein agreed to be payable is **Rs.7,47,500/- (Rupees Seven Lakh Forty Seven Thousand Five Hundred Only)** and the 2<sup>nd</sup> Party shall pay the same in two installments. The first installment 50% of the total amount in the month of June 2016 i.e. Rs.3,73,750/-, and the second installment 50% of the total amount in the month of March 2017 i.e. Rs.3,73,750/-.

**REPORTS:**

- a) ILM'S MTM (supervisors) will regularly visit the training premises / college to monitor, evaluate, and assess etc, the performance of its trainers / teachers.
- b) ILM encourages its colleges / learners for reporting the performance of the trainers and the course / training delivery carried out in the 2<sup>nd</sup> party's premises. The reporting can be done through the Hardcopy or Online based web-application- ILM will provide the 2<sup>nd</sup> party with a user ID for ILM'S School Management System, where the 2<sup>nd</sup> party can make use of the same for sending reports, viewing the performance, marking of attendance etc.
- c) If issues are not properly reported to 1<sup>st</sup> party or if the monthly report for a particular month is not sent to the 1<sup>st</sup> party, ILM (1<sup>st</sup> party) will presume that the classes (training) are going on smoothly. ILM will not be responsible for the consequences of any underlying issue that remain unreported.

1<sup>st</sup> Party  
(Seal & Signature)



Institute of Language Management (P) Ltd.  
*[Signature]*  
Proprietors  
2002PTC031097

2<sup>nd</sup> Party  
(Seal & Signature)

*[Signature]*  
**Dr. D. SASIREKA**  
**PRINCIPAL,**  
The Standard Fireworks Rajaratnam  
College for Women,  
SIVAKASI.

**General:**

- a) Further to this the first party will not be liable for any payments (if) made by the second party or its representatives to the trainers / teachers / staff of the first party.
- b) It is further understood that the termination / expiration of this MOU will not disentitle the 1<sup>st</sup> Party to claim the arrears.
- c) Any dispute shall be subjected to the courts of Bangalore Jurisdiction.
- d) The 2<sup>nd</sup> party shall provide conditions to facilitate learning environment for both indoor and outdoor activities. The learning environment shall include safe classrooms, offices, workshops, common spaces and other facilities. As a prelude to learning environment, the 2<sup>nd</sup> party shall monitor and address issues relating to environmental conditions including: adequate illumination and ventilation, housekeeping and cleanliness, safeguard against excessive weather conditions like dust, cold, heat and rain, controlling noise and distractions.
- e) Any changes in the said MOU can be done by mutual consent of both the parties, the second party has agreed to the first party to give its fullest co-operation during this project on the campus.

IN WITNESS WHEREOF THE PARTIES HERE TO HAVE SET AND SUBSCRIBED THEIR RESPECTIVE HANDS ON ~~THE~~ DAY AND YEAR FIRST HEREIN ABOVE WRITTEN.

1<sup>st</sup> Party  
(Seal & Signature)

Signed and delivered by the ~~written~~ named ILM (P) Ltd. through its Directors.



For Institute of Language Management (P) Ltd.

*[Handwritten Signature]*  
Directors

*[Handwritten Signature]*

✓ 2<sup>nd</sup> Party  
(Seal & Signature)

Signed & delivered by The Standard Fireworks Rajaratnam College for Women, Thiruthangal Road, Sivakasi – 626 123, Virudhunagar District, Tamil Nadu, represented by its Principal Dr. D Sasireka.

**Dr. D. SASIREKA**  
PRINCIPAL,  
The Standard Fireworks Rajaratnam  
College for Women,  
SIVAKASI.

## CLASSES TO ENHANCE COMMUNICATIVE SKILLS

THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN, SIVAKASI

Communicative English by Institute of Language Management – Time Table [ODD Semester 2016 – 2017]

Week Day	I	Room	II	Room	III	Room	IV	Room	V	Room
Day I	I Tamil	8	II Eng (R + SF) • Reg • SF	35 36	I BCA II Maths (CA) + II Nutrition	C15 42	I Maths + I Fashion • 1 – 50 • 51 – remaining	5 48	I His + I Micro • 1 – 40 • 41 – remaining	C13 M1
Day II	I Eng (R + SF) • Reg • SF	33 34	I His + I Micro • 1 – 40 • 41 – remaining	C13 48	II Chem II Bot	1 48	II Hist + II Micro • 1 – 40 • 41 – remaining	C14 48	I Physics I Comp Sci	46 C1
Day III	II Phy II Comp.Sci	46 C5	I Maths + I Fashion • 1 – 50 • 51 – remaining	5 42	II Chem II Bot	1 48	II IT + I IT	C11	II Eng (R + SF) • Reg • SF	35 36

Week Day	I	Room	II	Room	III	Room	IV	Room	V	Room
Day IV	I Maths (CA)+ I Nutrition	26	II Tamil	9	II Hist + II Micro • 1 – 40 • 41 – remaining	C14 40	I Eng (R + SF) • Reg • SF	33 34	I Chem I Bot	1 29
Day V	II Maths (CA) + II Nutrition II IT + I IT	42 C11	II Physics II Comp Sci	46 C5	II Tamil	9	II Maths (R) • 1 – 35 • 36 – remaining	31 48	I Tamil	8
Day VI	II Maths(R) • 1 – 50 • 51 – remaining	31 C6	I BCA	C15	I Chem I Bot	C13 47	I Physics I Comp Sci	48 C1	I Maths (CA)+ I Nutrition	26

*ebdu*  
CO-ORDINATOR

*Dasarika*  
PRINCIPAL

THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN, SIVAKASI  
ILM Communicative English – Time Table [Even Semester 2016–2017]

Hour Day	I	Room	II	Room	III	Room	IV	Room	V	Room
Day I	I Eng • Reg • SF	33 34	I Tamil II Maths(CA) + II Nutrition	8 42	II Tamil	9	I Physics I CSc	46 C1	II Physics II Comp. Sci	48 C5
Day II	I BCA + I B.Sc IT	C11	II Eng • Reg • SF	35 36	II Chem II Bot	1 48	I Eng • Reg • SF	33 34	I Maths(CA) + I Nutrition	26
Day III	II Maths II B.Sc IT	31 A5	I His + I Micro • 1 – 40 • 41 – remaining	C13 48	I B.Sc IT + I B.C.A	C11	II His + II Micro • 1 – 40 • 41 – remaining	C14 48	II Physics II Comp. Sci	46 C5

Hour Day	I	Room	II	Room	III	Room	IV	Room	V	Room
Day IV	II Hist + II Micro • 1 – 45 • 46 – remaining	C14 48	II Maths	31	I Chem I Bot	48 47	I Maths(R) + I Fashion • 1 – 30 • 31 – remaining	5 48	I Tamil	8
Day V	II Eng • Reg • SF	35 36	I His + I Micro • 1 – 40 • 41 – remaining	C13 48	II Chem II Bot	1 48	II Maths(CA) + II Nutrition	42	I Physics I Comp. Sci	48 C1
Week 7	I Maths(CA) + I Nutrition	26	II Tamil	9	II B.Sc IT	A5	I Chem I Bot	40 48	I Maths(R) + I Fashion • 1 – 30 • 31 – remaining	3 48

Coordinator

Principal