



Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University Estd. u/s 3 of UGC Act 1956, Category 'A' by MHRD
Re-accredited with 'A++' Grade by NAAC. CGPA 3.65/4, Category I by UGC
Coimbatore - 641 043, Tamil Nadu, India

Bharat Ratna Prof.CNR Rao Research Centre



Report of the Workshop on

**“One Day Hands on Training Programme on
Contact Angle Meter ”**

(for Researchers of Science and Engineering disciplines)

Date: 22.07.2023 (Saturday)

Time: 10.00 am to 4.30 pm

Venue: Room No: Gallery

Report on Workshop Contact Angle Meter - Training Programme

A One Day Hands on Training Programme for Contact Angle Meter was organized by Dr. P. Lalitha (Coordinator), Dr. P. Arulpriya (Assistant Coordinator) and Ms. S. Suba Sree (Lab Technician) of Bharat Ratna Prof. CNR Rao Research Centre . Ms. P.Aruna (Research Scholar, Chemistry) compered the event . The workshop was held on 22th July 2023 from 10.00 am - 04.30 pm at Gallery of our institution for Researchers of Science and Engineering disciplines.

The session began with a prayer song rendered by Ms. Akhila C, Research Scholar of Chemistry. It is followed by the introductory talk delivered by **Dr. P. Lalitha**, Director, Research and Development Cell. The facilities available at Bharat Ratna Prof. CNR Rao Research Centre are briefly summarized with a short video glimpse for the audience. The various applications of the contact angle meter and its significance in day-to-day life were also highlighted in the talk.

The theory and demonstration of the contact angle meter were handled by **Ms. Pon Nivetha. A**, Research Scholar, Department of Chemistry. The theory session focused on the instrumentation, fundamentals & methodology and applications of contact angle meter for various fields of study. The classification of wettability based on water contact angle and various factors affecting contact angle were illustrated. The diverse samples handled in contact angle instrument and significant inferences obtained are highlighted.

Towards the end of theory session, the other facilities available in the Research Centre, various consultancies offered in the institute and how to make use of them were rightly guided by **Dr. P. Arulpriya**, Asst. Coordinator of the research Centre, through official web-site.

The theory part is followed by centers visit like Centre for machine learning and intelligence and Prof CNR RAO Research Center. During the visits the technicians and scholars explained the instrumentation and facilities available to the participants. Hands-on training demonstration is given to participants in Prof. CNR Rao Research Centre. The various parts of the contact angle instrument, sample placing, operation and measurements were demonstrated for the participants. It includes static contact angle and sliding or rolling angle measurements. Different samples were handled and given training with the help

of the attached software. Few samples to mention include leaf, coated glass, and coated fabric and so on.

The conclusion of the workshop was with the question and answer sessions. The applications of contact angle meter for textile-related studies and its use for fiber and fabric samples were clarified by the speaker **Ms. Pon Nivetha. A.**, Researchers belonging to Chemistry, Organic Chemistry, and Textiles, from inside and outsiders from Bharathiar University, Coimbatore and Muthayammal College of Arts and Science, Rasipuram of about **12 in numbers were the beneficiaries** of the workshop.



Ms. P. Aruna, Research Scholart of Chemistry delivered Master of Ceremony and Ms. Akhila C, Research Scholar of Chemistry rendered prayer song





Dr. P. Lalitha, Director Research and Development, Coordinator Bharat Ratna Prof. C.N.R Rao Research Centre delivered introductory talk



Ms. A. Pon Nivetha, Research Scholar, Department of Chemistry delivered the talk about Contact Angle Meter and its usage involved in research work



Dr. P. Arulpriya, Assistant Coordinator Bharat Ratna Prof. C.N.R Rao Research Centre delivered the talk about research facilities & consultancies offered in the institute



Centre for Machine Learning and Intelligence (CMLI) Visit



Ms. A. Pon Nivetha, Research Scholar, Department of Chemistry gave Contact Angle Meter demonstration with various samples



Feedback and concluding session at Bharat Ratna Prof. C.N.R Rao Research Centre



E-Certificate of participation (sample copy)


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Coimbatore - 641 043, Tamil Nadu, India)

Bharat Ratna Prof.C.N.R Rao Research Centre

Workshop on

“One Day Hands on Training Programme for Contact Angle Meter”

On

22.07.2023 (Saturday)

Time: 10.00 am to 4.30 pm

Dr.P.Lalitha
Director R&D i/c
Will deliver the introductory talk

Demonstration and Training
Ms. A. Pon Nivetha
DST-INSPIRE Fellow, Dept. of Chemistry

Registration Fee: Rs.100/- , E-certificate will be provided to registered participants

Eligibility – Researchers of Science and Engineering disciplines of any institution

Registration link: <https://tinyurl.com/ymsdstt8>

Payment: to be paid on the day of workshop

About Contact Angle

Contact angle, θ (theta), is a quantitative measure of wetting of a solid by a liquid. The contact angle is geometrically defined as the angle formed by a liquid at the three-phase boundary where a liquid, gas, and solid intersect.

Contact angle is one of the common ways to measure the wettability of a surface or material and the measurement is a qualitative way to evaluate whether the surface has a hydrophobic or hydrophilic characteristic. Wetting refers to the study of how a liquid deposited on a solid (or liquid) substrate spreads out or the ability of liquids to form boundary surfaces with solid states. It is based on the observation of the intermolecular interactions between the surface and a small drop of water when the drop meets the surface. A contact angle can be large or small, depending on the physical properties of the materials being investigated.

Some of the key uses and features of Contact Angle:

Surface Tension: The surface tension of a droplet is determined by the interactions between its constituent molecules

Balanced Forces: There are three boundaries to consider when a droplet is in contact with a solid surface: the solid, the liquid, and the vapor (usually air) surrounding them

Surface Free Energy: An important application of the contact angle measurement is to determine a solid-surface's characteristic surface free energy (SFE). The surface free energy of a solid is an equivalent parameter to the surface tension of a liquid and the units are the same mN/m or dynes/cm.

Application:

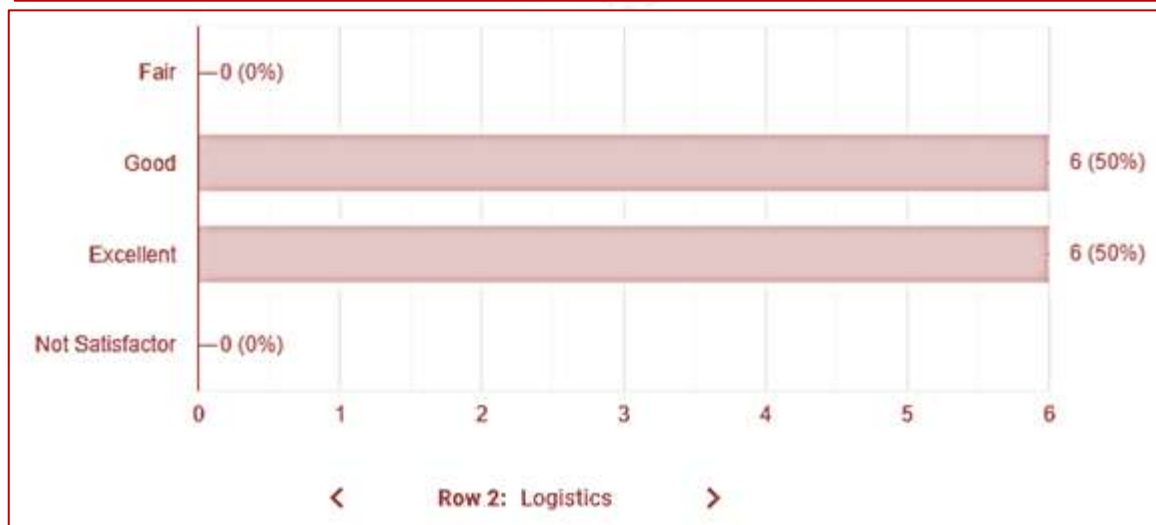
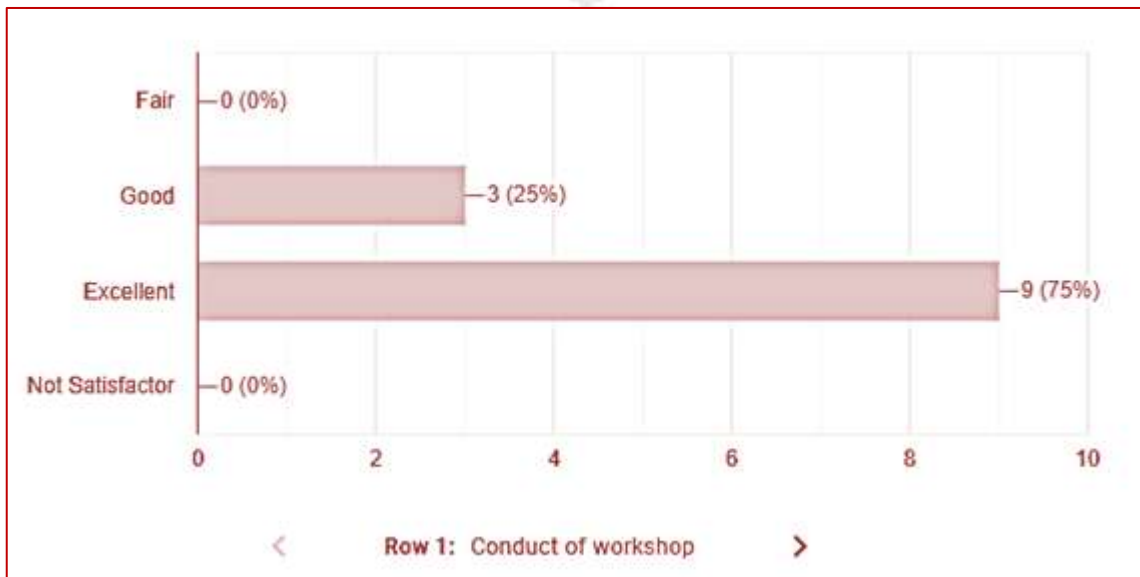
Evaluation of Hydrophobicity: Example:-Automobile, Wax, Coatings, Paints, Fibers for rain gear, Building materials, Electric cables, Ceramic Insulators, Glass, materials used for humid environment, etc...

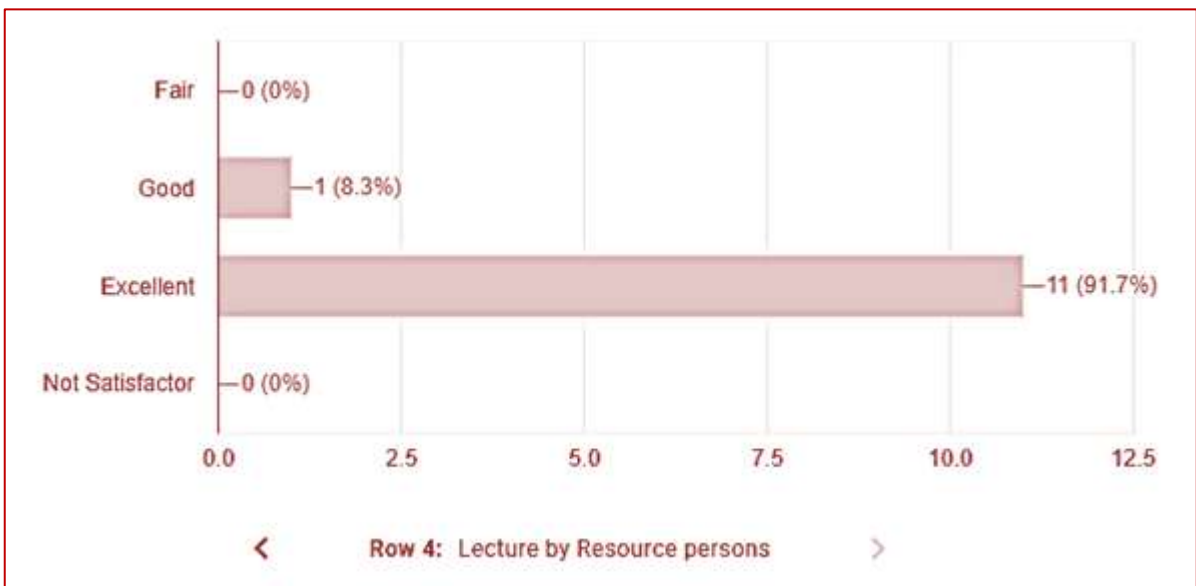
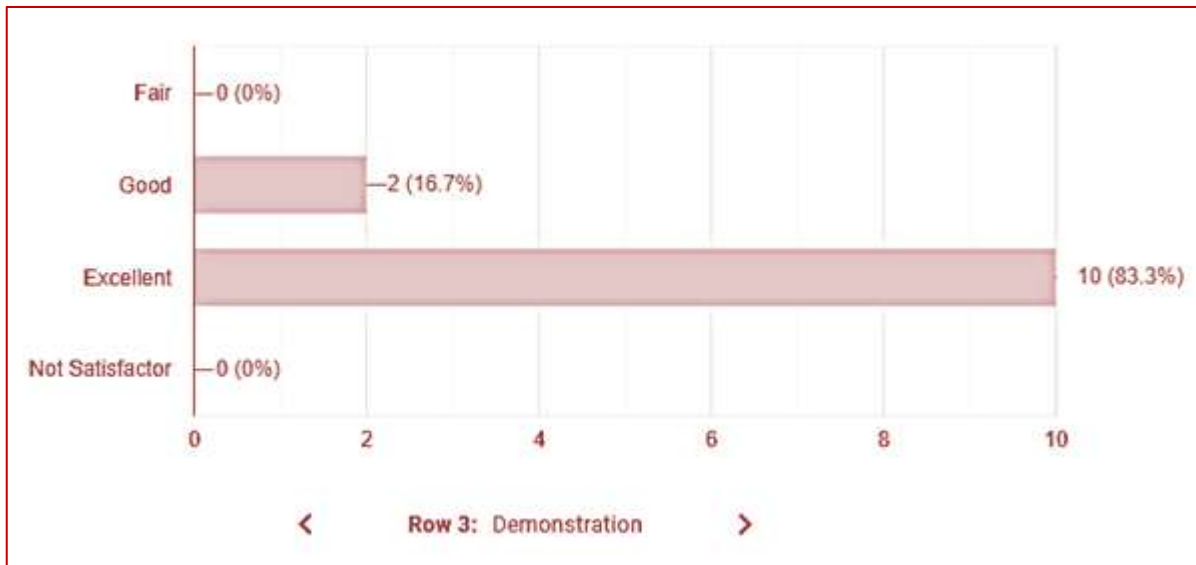
Evaluation of Hydrophilicity: Example:-Detergents, Cleaning solution, Surfactants, Fats & Oils, Plating solutions, Pharmaceuticals, Food, Agricultural Chemicals, Paints, Printing, CD's, Adhesives, Electronics, Cosmetics, Contact lenses, etc...

PROGRAMME

10.00 am- 10.05 am	:	Prayer
10.05 am- 10.15 am	:	Welcome
10.15 am – 3.30pm	:	Theory and Demonstarion Sessions, Visit to Research Centres of the Institution
3.30 pm-4.15 pm	:	Feedback Session / Interaction
4.15 pm - 4.30 pm	:	Vote of Thanks
Registration link	:	https://tinyurl.com/ymsdstt8
Registration Fee	:	Rs.100/-
Theory session	:	Gallery
Practical session	:	Prof. CNR Rao Research Centre in batches of 10

Feedback about the event





Suggestion given by participants

NA

No suggestions

Please notify the centre address

Useful Session. Thank you

It is really fruitful session


Nil

All sessions were very informative. Thank you for organizing this training programme, it'll be very much useful for my project.

No

Expecting similar workshops in future

Attendance Sheet of the Participants



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 Coimbatore - 641 043, Tamil Nadu, India

Bharat Ratna Prof. CNR Rao Research Centre

Workshop on "One Day Hands on Training Programme for Contact Angle Meter"

Date: 22.07.2023(Saturday) Time: 10.00 am to 4.30 pm Venue: Gallery & Prof. CNR Rao Research Centre

Attendance Sheet

S. No	Name of the Participant	Class/ Designation	Email id	Contact Number	Signature	
					Forenoon	Afternoon
1	AKHILA C	PhD Chemistry	akhilac92@gmail.com	9655665004		
2	ARUNA P	Ph.D Chemistry	arunaprasanna19@gmail.com	9764649719		
3	VYSHNAV.S	PhD Chemistry	vysnavisiva@gmail.com	8220100282		
4	K.SARANYA	Ph.D Textiles	svaniphundhanmages@gmail.com	9500491967		

Event Title: Prof.CNR Rao Research Centre
Avinashilingam Institute for Home Science and Higher Education for Women,
Coimbatore-641043

5	S.Siva Shankini	Ph.D Textiles	sipthefox@avinity.ac.in	9600642639		
6	K.Masra	Ph.D Textiles	masraak123@gmail.com	7651352832		
7	Gangathri.M	Ph.D Textiles	gangathri19@gmail.com	9795619879		
8	A. Sushvan	M.Sc Organic Chemistry	akushvanathi@gmail.com	8925058939		
9	K. Saravanan	M.Sc Chemistry	saravananan11@gmail.com	7448956750		
10	K. Sakthivel	M.Sc Organic Chemistry	sakthivelanb@gmail.com	6381436654		
11	J. Parvathy	Ph.D Scholar Textiles	parvathy.p@gmail.com	956647234		
12	S. Sindhu	Ph.D Chemistry Avinity	siphchfo2@avinity.com	9500302309		
13	Gangathri.M	Ph.D scholar Textiles and Apparel	gangathri19@gmail.com	9345659879		
14						
15						
16						
17						
18						
19						

Event Title: Prof.CNR Rao Research Centre
Avinashilingam Institute for Home Science and Higher Education for Women,
Coimbatore-641043

Receipts of the Workshop

(Total Amount: Rs.1200/-)

https://ecampus.avinuity.ac.in/ecampus/trn_feedetails/miscellaneous


Avinashilingam Institute for Home Science and Higher Education for Women
Deemed to be University Est. in 1962, No. 208, Campus 1, Avinashilingam
Residential Area, Coimbatore-641 022, Tamil Nadu, India
Contact No: 0422-2626100, Fax: 0422-2626101

Miscellaneous Receipt

Original

Receipt No: **REM928/2023-24**
Receipt Date: **02-08-2023**
Name: **A.Krishnan**
Department Name: **M.Sc.Organic Chemistry, MUTHAVAMMAL COLLEGE OF ARTS AND SCIENCE**
Account Type: **Research and Consultancy**
Towards: **Prof.CNR Rao Res.Center**
Description: **One-Day Hands on Training Programme on Measurement of Contact Angle Workshop (Ref:320312420194/22-07-2023)**
Mode of Payment: **Cash**
Amount: **₹ 300.00/-**
(Received Three Hundred rupees only)


Cashier

https://ecampus.avinuity.ac.in/ecampus/trn_feedetails/miscellaneous


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Residential Area, Coimbatore-641 022, Tamil Nadu, India
Contact No: 0422-2626100, Fax: 0422-2626101


Miscellaneous Receipt

Original

Receipt No: **REM931/2023-24**
Receipt Date: **02-08-2023**
Name: **Contact Angle Workshop**
Department Name: **ADI**
Account Type: **Research and Consultancy**
Towards: **Prof.CNR Rao Res.Center**
Description: **One-Day Hands on Training Programme on Measurement of Contact Angle Workshop (Ref:320307220824/22-07-2023)**
Mode of Payment: **Cash**
Amount: **₹ 700.00/-**
(Received Seven Hundred rupees only)


Cashier


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Contact No: 0422-2626100, Fax: 0422-2626101

Miscellaneous Receipt

Original

Receipt No: **REM929/2023-24**
Receipt Date: **02-08-2023**
Name: **K.Sriniva**
Department Name: **Ph.D Textiles, BHARATHIAR UNIVERSITY**
Account Type: **Research and Consultancy**
Towards: **Prof.CNR Rao Res.Center**
Description: **One-Day Hands on Training Programme on Measurement of Contact Angle Workshop (Ref:320312057555/22-07-2023)**
Mode of Payment: **Cash**
Amount: **₹ 100.00/-**
(Received One Hundred rupees only)


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Residential Area, Coimbatore-641 022, Tamil Nadu, India
Contact No: 0422-2626100, Fax: 0422-2626101

Miscellaneous Receipt

Original

Receipt No: **REM930/2023-24**
Receipt Date: **02-08-2023**
Name: **Aruna.P**
Department Name: **Ph.D Chemistry, ADI**
Account Type: **Research and Consultancy**
Towards: **Prof.CNR Rao Res.Center**
Description: **One-Day Hands on Training Programme on Measurement of Contact Angle Workshop (Ref:320347922250/22-07-2023)**
Mode of Payment: **Cash**
Amount: **₹ 100.00/-**
(Received One Hundred rupees only)


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Permission Letter



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Recognised by UGC Under Section 12 B Coimbatore-641 043, Tamil Nadu, India

GUIDELINES/PROFORMA FOR ORGANISING CONFERENCES, WORKSHOPS, SEMINARS, WEBINARS OR OTHER EVENTS MARCH 2022 and onwards

Name of the applicant: **Dr.P.Lalitha**, Department: **Prof. CNR Rao Research Centre** School: **R & D**

1. Activity : **Workshop**
2. Geographical Coverage : **State Level**
3. Name of the Event : **One Day Hands on Training Programme for Contact Angle Meter**
4. Date(s) : **22.07.2023 (Saturday)** Total number of days: **One**
5. Venue : **Bharat Ratna Prof CNR Rao Research Centre**
6. Name & Designation of Convenor/Organizing Secretary and Team
Convenor : **Dr. P. Lalitha, Director R&D i.e, Coordinator, Prof. CNR Rao RC**
Organizing Secretary : **Dr. P. Arulpriya, Asst. Coordinator, Prof. CNR Rao RC**
Organizing Member : **Ms. S. Suba Sree, Lab Technician, Prof.CNR Rao RC**
7. Financial Assistance Required : **No**
8. Details of assistance sought from other sources : **Nil**
9. Details of collaborating institution, if any : **Nil**
10. Detailed Proposal of the Activity

A. Aims/Objectives :

To enhance a quality way to acquire the basic principle, Handling Techniques of Instrument, Characterization and application of Contact angle meter for their research work among scholars.

B. Target audience/participants with expected number: **30**

C. Details of Sessions:

Forenoon : **Theory Session and Lab Visit**

Afternoon: **Hands on Training**

D. Please mention themes/topics to be covered under each Technical Session and names of Resource Persons:

Theory Session: **Dr.P.Lalitha, Director R&D i.e, Coordinator, Prof. CNR Rao RC**

Demonstration : **Ms. A. Pon Nivetha, DST-Inspire Fellow, Dept. of Chemistry, ADU**

E. Expected outcome: **To gain knowledge about the instrument characterization and its effective usage of application in research field**

11. In case of an International Conference and collaboration, kindly give resources for International travel and a letter from the concerned head of the collaborating body

12. Registration fee: Yes, Rs. **100** per participant.

P. Arulpriya
14.07.2023
Asst Coordinator

P. Lalitha
14/7/2023
Coordinator

Arjun
14/7/2023
Finance Officer

Registrar

Shanathis
14/07/2023
Vice Chancellor

Date: **14.07.2023**
Place: **Coimbatore**

Recd.
14/7/23
vch
14/7/23

Acknowledgement

The organizers thank the authorities of the Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore for the necessary approvals and opportunity to conduct this event.

Signature of the Coordinator


Dr.P.Lalitha
Professor of Chemistry & Director R&D
& Co-Ordinator
Bharat Ratna Prof.C.N.R Rao Research Centre
Avinashilingam Institute for Home Science and
Higher Education for Women,
Coimbatore - 641 043 E-mail : lalitha_chem@avinutty.ac.in
Dean_research@avinutty.ac.in

