

**NATIONAL CENTRE OF EXCELLENCE IN
ANALYTICAL CHEMISTRY,**

University of Sindh, Jamshoro

www.ceacsu.edu.pk



Annual Report for the Period of

1st January 2015 – 31st December 2015

Annual Report for the Period of 1st January 2015 – 31st December 2015

Summary

The National Centre of Excellence in Analytical Chemistry, University of Sindh, during last **13** years has emerged as a strong institution of higher learning at par with other prestigious R & D institutions. Significant achievements are production of skilled manpower i.e. M.Phil and Ph.D's, international research publications, several national / international conferences / seminars, presentation of plenary lectures in conferences at home / abroad and providing continuous services to the local industry as well as the community. Several funded research projects are ongoing and few of them have completed. Their details are given in the report later.

The total number of international publications (listed in this report) is 106 in internationally recognized Journals. Beside this there are number of **awards** won by the faculty and the research students of this Centre during the reported period. This Center has developed academic linkages with Middle East Technical University, Turkey, Selcuk University, Konya, Turkey, Hacettepe University, Ankara, Turkey and Charles University, Prague, Czech Republic and Wake Forest University, Winston-Salem, USA. As a result of all these efforts this Centre is now being recognized internationally. The Centre has thus contributed significantly in raising the academic ranking of the University of Sindh, Jamshoro.

Faculty Strength

1. Prof. Shahabuddin Memon, Ph.D (Turkey) Postdoc. (*USA*)
(**Director**)
2. Prof. Tasneem G. Kazi, Ph.D (SU), Postdoc. (*USA*) (on Contract)
3. Prof. Shafi M. Nizamani, Ph.D. (*Perdue*, U.S.A), Postdoc. (*USA*) (on Contract)
4. Prof. Tufail Hussain Sheerazi, Ph.D. (SU), Postdoc. (*Canada*)
5. Prof. Sirajuddin, Ph.D. (Pesh. Univ.) Postdoc. (*Australia*)
6. Associate Prof. Dr. Najma Memon, Ph.D. (SU), Postdoc. (*USA*)
7. Associate Prof. Dr. Amber Rehana Solangi, Ph.D. (SU), Postdoc. (*Australia*)
8. Associate Prof. Dr. Farah Naz Talpur, Ph.D. (SU), Postdoc. (*Turkey*)
9. Assistant Prof. Dr. Hassan Imran Afridi, Ph.D. (SU), Postdoc. (*Ireland*)
10. Assistant Prof. Dr. Sarfaraz Ahmed Mahesar, Ph.D. (SU), Postdoc. (*Turkey*)
11. Assistant Prof. Dr. Aamna Baloch, Ph.D. (SU) Postdoc. (*Malaysia*)
12. Assistant Prof. Dr. Jameel Ahmed Baig Mughal, Ph.D. (SU), Postdoc. (*Turkey*)
13. Assistant Prof. Dr. Ayaz Ali Memon, Ph.D. (SU)
14. Lecturer Dr. Huma Ishaque Shaikh, Ph.D. (SU)

Awards achieved

- **Award of Outstanding Contribution to Chemical Sciences**

Prof. Shahabuddin Memon has been awarded a *Gold Medal* by Pakistan Academy of Sciences in the field of Chemical Sciences in recognition of his outstanding work in the subject.

- **INFOODS Success Story Award-2015**

The **INFOOD Success Story Award 2015** for Pakistan goes to **Assoc. Prof. Dr. Najma Memon** for her remarkable contribution in updating 'Food Composition Table of Pakistan' – which is now under progress for production at the Centre and Ministry of Planning, Communication and Development in association with FAO, Pakistan. INFOODS is part of FAO of United Nations. This year, the award ceremony took place at International Food Composition Data Conference, hosted by National Institute, Hyderabad, India on 3-5 November 2015.

- **Research Productivity Award**

Prof. Tasneem Gul Kazi and **Dr. Hassan Imran Afridi** received Research Productivity Allowance in category A. Whereas, **Prof. Shahabuddin Memon**, **Prof. Tufail Hussain Sherazi** and **Prof. Sirajuddin** received RPA in B category, while and **Dr. Farah Naz Talpur** in C category. Besides this, 02 Ph.D. scholars also received RPA in C category.

- **Visiting Scientist Award**

Dr. Huma Ishaque Shaikh was invited as a visiting scientist by Department of Chemistry, Hacettepe University, Ankara, Turkey. She visited the biochemistry division of the department in the month of September, 2015 and stayed for one month. During her stay in Turkey she prepared monolithic column for separation of aromatic compounds using capillary electro-chromatography. She and Prof. Adil Denizli also planned joint research projects and submitted one project jointly to PSF and TUBITAK under JOINT RESEARCH PROJECTS BETWEEN PSF (PAKISTAN) AND TÜBİTAK (TURKEY).

- **International Research Support Initiative Program (IRISP) Fellowship Awarded By HEC**

Mr. Raziim soomro had been awarded HEC scholarship under IRSIP to pursue part of his Ph.D. research studies at Bristol University, England. He successfully completed his research work and joined back the Centre in June 2015.

- **Post Doctoral Research Completed in Turkey**

During the current period the following Post-Doc Research Fellows of this Centre availed scholarship for one year under “**Research Fellowship Program for Foreign Citizens**” awarded by Technical Research Council of Turkey (TUBITAK).

Name of Research Fellow	Name of host University
Dr. Fakhar un Nisa Memon	Department of Chemistry, Selçuk University, Konya 42031, Turkey

- **Post Doctoral Research ongoing in Turkey**

Following Research Fellows of this Centre are pursuing their Post-Doc under scholarship for one year under “**Research Fellowship Program for Foreign Citizens**” awarded by Technical Research Council of Turkey (TUBITAK)

Name of Research Fellow	Institution
Dr. Naeem Ullah	Erciyes University, Fen-Edebiyat Faculty, Department of Chemistry, 38039, Kayseri-Turkey
Dr. Asif Ali Bhatti	Department of Chemistry, Selçuk University, Konya 42031, Turkey
Dr. Razuim Soomro	Department of Chemistry, Fatih University, Istanbul, Turkey

- **Part of Ph. D Research by Turkish Fellowship Grants (Completed)**

During the current period the following Research Fellows of this Centre availed scholarship for one year under “**Research Fellowship Program for Foreign Citizens**” awarded by Technical Research Council of Turkey (**TUBITAK**) and completed part of their Ph.D. research in respective universities of Turkey.

Name of Research Fellow	Institution
Mr. Abdul Qayoom Laghari	Department of Chemistry, Karadeniz Technical University, Trabzon 61080, Turkey
Mr. Ashfaque Bhatti	Department of Chemistry, Karadeniz Technical University, Trabzon 61080, Turkey
Ms. Fouzia Minhas	Department of Chemistry, Selçuk University, Konya 42031, Turkey

- **Part of Ph. D Research by Turkish Fellowship Grants (Ongoing)**

During the current period the following Research Fellows of this Centre were granted scholarship for one year under “**Research Fellowship Program for Foreign Citizens**” awarded by Technical Research Council of Turkey (**TUBITAK**). They are pursuing their research at respective universities of Turkey.

Name of Research Fellow	Institution
Ms. Tahira Qureshi	Department of Chemistry, Hacettepe University, Ankara-Turkey
Ms. Kosar Rajar	Department of Physics and Engineering, Istanbul Technical University, Istanbul, Turkey
Mr. Jamshed Ali	Gaziosmanpasa University, Faculty of Science and Arts, Chemistry Department, 60250 Tokat, Turkey

- **Ongoing HEC Indigenous Ph.D. Fellowships**

The following Ph.D. Scholars of this center have been awarded HEC indigenous 5000 Fellowships fully funded by HEC.

1. **Ms. Almas Fatima Memon** working on “*Development of capillary electrophoretic method for determination of selected flavonoids and their metabolites in biological fluids*”.
2. **Ms. Sanam Soomro** working on “*Revising and generating new food composition table of Pakistan*”.
3. **Mr. Anwar Ali Chandio** working on “*Synthesis and characterization of Calix [4] arene metal complexes and their applications*”

Details of Research Projects

- **Ongoing Funded Research Projects**

- **Nationally Funded**

- Research project on “*Nutritional Assessment of Selected Non-Traditional Vegetables of Sindh*” has been funded by HEC. The total cost of the project is Rs. 6.25 millions. PI: Prof. S.A. Sheikh, Co-PI: Prof. S.M. Nizamani (April 2015- April 2017).
- Research project on “*Metal Ion Imprinted Polymers (Miips): Novel Material for Pre-concentration and Separation of Total Arsenic in Aqueous Systems*” has been funded by Pakistan Science Foundation. The total cost of the project is Rs. 2.0 millions. P.I. Dr. Aamna Balouch, Co-PI: Prof. Muhammad Iqbal Bhanger.

- **Internationally Funded**

- Research project on “*Evaluation of Chromium Speciation in Drinking Water, Domestic Waste Water and Industrial Effluents of Sindh, Pakistan and its Bio-Remediation*” has been funded by The World Academy of Sciences (TWAS). The total cost of the project is Rs. 1.2 millions. PI: Dr. Jamil Ahmed Baig (Duration 18 months).
- Research project on “*Empowering of Pakistani Women through translational research in the sciences: Waste-to-Energy Conversion, and Water Purification Technology development*” has been funded by Higher Education Commission under Pak-US Science and Technology Cooperation Program. The total cost of the project is Rs. 21.05 millions. PI: Dr. Najma Memon.
- Research project on “*Characterization, Separation and Encapsulation of Valuable Components from Canola Oil Deodorizer Distillates*” has been funded by The Research Institute of Food Science and Technology (RIFST), Mashhad, Iran. The total cost of the project is Rs. 1.15 millions. P.I. Prof. Tufail Hussain Sherazi.

- **Research Projects Completed in 2015**

- Research project on “*Mitigation of Mycotoxin Residues in Poultry Feed*” funded by HEC had been successfully completed in 2015. The total cost of the project was Rs. 3.0 millions. P.I. Prof. Tufail Hussain Sherazi, Co. P.I. Prof. Shafi Muhammad Nizamani.

- Research project on “*Evaluation of Status of Arsenic in Surface and Groundwater of Sindh Province: Evaluated some Indigenous Material for its Removal from Water*” funded by HEC had been successfully completed in 2015. The total cost of the project was Rs. 1.17 millions. P.I. Prof. Tasneem Gul Kazi.
- Research project on “*Detoxification/ Degradation of Organic Pollutants using Enzyme Immobilized Organogel Silica hardened Nano-composites*” funded by Pakistan Science Foundation had been successfully completed in 2015. The total cost of the project was Rs. 1.2519 millions. P.I. Dr. Najma Memon.

Degrees Awarded

- **Ph.D Degrees Awarded in 2015**

Total 09 research scholars of the Center successfully fulfilled the requirements for the award of Ph.D. degree. They were awarded degree of Ph.D. by University of Sindh in 2015.

S. No.	Name of Student	Topic	Supervisor
1.	Ms. Fouzia Tabasum	Development of nanoporous materials and their application in separation sciences	Prof. Muhammad Iqbal Bhangar, Prof. Shahabuddin Memon
2.	Ms. Saba Naz	Analytical Characterization of Waste-Products Obtained During Oil Refining	Prof. Tufail Hussain Sherazi, Dr. Farah Naz
3.	Ms. Huma Ishaque	Molecularly imprinted polymer-matrix for determination and removal of selected trace organic contaminants from water systems	Prof. Muhammad Iqbal Bhangar, Dr. Najma Memon, Prof. Shafi Muhammad Nizamani
4.	Ms. Sumera Khan	Development of Advance Extraction Methods for the Determination of Aluminum and Vanadium In Environmental, Biological And Pharmaceutical Sample.	Prof. Tasneem Gul Kazi, Dr. Hassan Imran Afridi
5.	Mr. Umair Qureshi	Use of new materials for the removal of Phthalates by solid phase extraction	Dr. Amber R. Solangi, Dr. Iqleem
6.	Mr. Asif Bhatti	Synthesis of Calix[4]arene based receptors for the removal of anions from aqueous media	Prof. Shahabuddin Memon, Dr. Najma Memon
7.	Mr. Muhammad Ali Mallah	Analytical Application of FT-IR Spectroscopy in the Pharmaceutical Industries	Prof. Tufail Hussain Sherazi, Prof. Muhammad Iqbal Bhangar, Dr. Sarfaraz A. Mahesar
8.	Mr. Muhammad Ashraf	Adsorption of Herbicides in Wheat crop on Different Soils	Prof. Muhammad Iqbal Bhangar, Prof. Tufail Hussain Sherazi, Prof. Shafi Muhammad Nizamani
9.	Mr. Zahid Shar	Assisment of Mycotoxin Residue Level in the Poultry feed	Prof. Muhammad Iqbal Bhangar, Prof. Tufail Hussain Sherazi, Prof. Shafi Muhammad Nizamani

• **M.Phil Degrees Awarded in 2015**

Total 16 research scholars of the Center successfully fulfilled the requirements for the award of M.Phil degree. They were awarded degree of M.Phil by University of Sindh in 2015.

S. No	Name of Student	Topic	Supervisor
1.	Ms. Sidra Ameen	Electrochemical determination of selected analgesic drugs of environmental concern using solid state electrodes.	Dr. Najma Memon, Dr. Amber R. Solangi
2.	Ms. Anita Memon	Synthesis of modified calix[n]arene derivatives and their application in electrochemistry	Dr. Amber R. Solangi, Prof. Shahabuddin Memon
3.	Mr. Abdul Sattar Soomro	Development of new method for the determination of Hg ²⁺ in environmental samples	Prof. Tasneem Gul Kazi Prof. Sirajuddin
4.	Ms. Nusrat Shahab Memon	Evaluation of calcium, iron, manganese and lead in the biological samples of thyroid patients	Prof. Tasneem Gul Kazi, Dr. Imran Hassan Afridi, Dr. Jameel Ahmed Baig
5.	Ms. Safia Sanam	Drug based synthesis of precious metal nanoparticles and their application for electrochemical sensing.	Prof. Sirajuddin, Dr. Amber R. Solangi
6.	Ms. Shazia Bhurgri	Biodegradation of waste engine oil by selected microorganisms.	Dr. Farah Naz Talpur, Prof. Shafi Muhammad Nizamani & Dr. Imran Afridi
7.	Ms. Roomia Memon	Nutrient profiling of wheat varieties in Sindh	Dr. Ayaz Memon, Dr. Najma Memon, Prof. Shahabuddin Memon
8.	Ms. Paras Azadi Memon	Adsorptive removal of thiophenic compounds from hydrocarbon fuel	Dr. Najma Memon, Dr. Amber R. Solangi, Dr. Ayaz Memon
9.	Mr. Shahnawaz Baloch	Evaluation of lithium level in drinking water of Sindh and scalp hair samples of psychiatric patients	Prof. Tasneem Gul Kazi & Dr. Hassan Imran Afridi
10.	Mr. Muhammad Waris	Evaluation of roxarson in poultry feed and litter	Dr. Jameel Ahmed Baig, Prof. Tasneem Gul Kazi, Dr. Hassan Imran Afridi
11.	Mr. Tarique Panhwar	Production of biodiesel from blends of castor and cotton seed oil	Dr. Sarafaraz Ahmed Maherar, Dr. Farah Naz

			Talpur, Dr. Aftab Ahmed Kandhro
12.	Mr. Zahid Hussain Laghari	Quality evaluation of oil present in the waste of pomegranate fruit	Prof. Tufail Hussain Sherazi, Prof. Sirajuddin, Dr. Sarfaraz Ahmed Mahesar
13.	Mr. Abdul Sattar Chang	Isolation of valuable products from palm oil deodorizer distillate	Prof. Tufail Hussain Sherazi, Dr. Sarfaraz Ahmed Mahesar, Dr. Aftab Ahmed Kandhro
14.	Mr. Anwar Ali Chandio	Synthesis and characterization of Calix [4] arene metal complexes and their applications	Prof. Shahabuddin Memon, Dr. Ayaz Memon, Prof. Shafi Muhammad Nizamani
15.	Ms. Saba Waris	Microbial production of conjugated Linolenic acid using Linolenic acid as substrate	Dr. Farah Naz Talpur, Dr. Amber R. Solangi, Dr. Aamna Balouch
16.	Mr. Oan Muhammad Sahito	Study of poultry waste as source of heavy metals to vegetables	Dr. Hassan Imran Afridi, Dr. Jameel Ahmed Baig, Prof. Tasneem Gul Kazi

- **Ph.D. Thesis Submitted for Examination**

Following Research fellows of the Centre have completed work and submitted their Ph.D. thesis during the current year to the University of Sindh for examination:

1. Ms. Sadaf Sadia
2. Ms. Sana Jawaid
3. Mr. Sibghatullah Memon

- **M.Phil. Thesis Submitted for Examination**

Following Research fellows of the Centre have completed work and submitted their M.Phil thesis during the current year to the University of Sindh for examination:

1. Ms. Aamna Najeeb
2. Ms. Sadia Shakeel
3. Ms. Erum Akhund
4. Ms. Shabana Gul Mugheri
5. Mr. Manzar Khan Shaikh

- **Enrolled M.Phil / Ph.D. Research Fellows**

A total of **88** research fellows are continuing their research work in this Center, out of which **62** are M. Phil and **26** are Ph.D. research fellows. The batch of **26** M. Phil Research Fellows of batch 2015 – 2016 has successfully completed 1st Semester of Course work in **December 2015**.

Seminars / Conference / Workshops / Lectures Organized in 2015

The following activities were organized during 2015 by this Center;

- **NCEAC Lecture Series**

- **Prof. Hacı Mehmet Doğan** from Hacettepe University, Ankara, Turkey delivered a lecture on “*Development and current status of Science in Muslim Countries*”.
- **Prof. Irshad Hussain** from Lahore University of Management Sciences delivered a lecture on “*Functionalized metal nanoparticles/nanoclusters - synthesis and applications in biosensing and disease diagnostics*”.
- **Prof. Pervaiz Masood** from Department of Chemistry, University of Calgary, Alberta, Canada delivered lecture on “*X-ray Crystallography*”.

- **Workshops Organized**

- **Application of Bio-analytical Techniques in the field of Physiology**

National Center of Excellence in Analytical Chemistry jointly organized with ISRA University a one day workshop on “**Application of Bio-analytical Techniques in the field of Physiology**”. The participants were given demonstrations on different analytical instruments present in this Center.

Seminars / Conference / Workshops / Lectures attended by faculty in other Organizations / Universities in 2015

- **Workshop organized by Baoma Oil & Fats Co., Ltd. China**

Prof. Tufail Hussain Sherazi was invited as speaker in “Workshop organized by Baoma Oil & Fats Co., Ltd. China”. He delivered lecture on “*Improvements in designing and pressing in Solvent Extraction Plant*”.

- **11th Science, Technology and Innovation Management Training Course for Researchers in OIC Countries**

Dr. Amber R. Solangi attended “11th Science, Technology and Innovation Management Training Course for Researchers in OIC Countries” organized by Malaysian Technical Cooperation Program from 4 - 13 October 2015, Kuala Lumpur, Malaysia. She was nominated by Ministry of Economic Affairs division, Islamabad.

- **2015 International KÖYCEĞİZ meetings, Turkey**

Dr. Huma Ishaque Shaikh delivered oral presentation in “2015 International KÖYCEĞİZ meetings” organized by Hacettepe University, Ankara, Turkey from 6-12 September 2015 at KÖYCEĞİZ, Turkey. The title of her presentation was “*Synthesis of surface imprinted PHEMA cryogel for Aluminum*”.

- **2nd International Conference on Agriculture, Food and animal Sciences**

Dr. Farah Naz Talpur attended “2nd International Conference on Agriculture, Food and animal Sciences” from 25-26 February 2015. The conference was organized by Department of Food Technology, Sindh Agriculture University Tandojam.

- **3rd International Conference on Energy & Environment: Innovation, Research & Sustainability (ICEE'15)**

Dr. Farah Naz Talpur attended “3rd International Conference on Energy & Environment: Innovation, Research & Sustainability (ICEE'15)” from 12 - 14 March, 2015. The conference was organized by Energy & Environment Engineering Department, QUEST, Nawabshah, Pakistan.

- **2nd International Conference on ‘Drug development- Natural and synthesis**

Dr. Ayaz Memon participated in “2nd International Conference on ‘Drug development- Natural and synthesis” from 23-25 August 2015. The conference was organized by Centre for Advanced Drug research, (CADR) COMSATS, Institute of Information Technology, Abbottabad – Pakistan.

- **2nd Conference on Frontiers of Nanoscience and Nanotechnology**

Dr. Aamna Balouch delivered a lecture in “2nd Conference on Frontiers of Nanoscience and Nanotechnology, organized by PINSTECH from 8-10 September 2015. Title of her talk was “*Bi-Metallic/Heterometallic nanostructures (NSs) and their catalytic activities*”

- **26th National and 14th International Chemistry Conference**

No of faculty members and research scholars of this Center participated in “26th National and 14th International Chemistry Conference” held at the Islamia University Of Bahawalpur, Pakistan from 5-8 October 2015. They delivered invited lectures, oral and poster presentations.

- **Seminar on Modernization of Truck Freight Transport in Pakistan**

Dr. Najma Memon attended Seminar on “Modernization of Truck Freight Transport in Pakistan” organized by Pakistan Sustainable transport (PAKSTRAN) project: CIU-Trucking Islamabad (UNDP-Project) from 5-6 November 2015 at PC Hotel Karachi.

- **Conference on Emerging Materials and Process**

Dr. Najma Memon delivered oral presentation in “Conference on Emerging Materials and Process” organized by NUST, Islamabad from 22-23 December 2015. The title of her presentation was “*Characterization and application of metallic salt/ nanoparticle composite organogels for room-temperature desulfurization of hydrocarbon fuel*”.

Dr. Huma Ishaque shaikh also delivered oral presentation in “Conference on emerging materials and process” organized by NUST, Islamabad from 22-23 December 2015. The title of her presentation was “*Synthesis and characterization of trichlorfon imprinted particles embedded composite cryogel column: Application for the selective extraction of trichlorfon from aqueous samples prior to liquid chromatographic analysis*”.

Course Work

- Details of Courses taught to M. Phil.**

Code	Course Title	CH	Teachers
1st Semester (from July to Dec)			
CHEM-701	Atomic Spectroscopy	2	<i>Prof. T.G.Kazi Dr. Hassan Imran Afridi</i>
CHEM-702	Molecular Spectroscopy	2	<i>Dr. Amber R. Solangi, Dr. Ayaz Ali Memon Dr. Sarfaraz Ahmed Mahesar</i>
CHEM-703	NMR/MS	2	<i>Prof. S. T. H. Sherazi Prof. Shahabuddin Memon Dr. Farah Naz</i>
CHEM-704	Electroanalytical Techniques	2	<i>Prof. Sirajuddi Dr. Amber R. Solangi</i>
CHEM-705	Chemometrics-I	2	<i>Dr. Hassan Imran Afridi, Dr. Jameel Ahmed Baig</i>
CHEM-706	Lab Work, Computer Lab	N.C	<i>Dr. Ayaz Memon</i>
CHEM-707	Environmental Chemistry	2	<i>Dr. Najma Memon Prof. S.M. Nizamani,</i>
CHEM-708	Chemical Safety	N.C	<i>Dr. Huma Ishaque Shaikh</i>
Sub-Total		12	
2nd Semester (from Jan to June)			
CHEM-751	Chromatographic Techniques	2	<i>Dr. Najma Memon Dr. Farah Naz Talpur</i>
CHEM-752	Nanotechnology/Biosensors	2	<i>Prof. Sirajuddin</i>
CHEM-753	Chemometrics-II	3	<i>Dr. Hassan Imran Afridi Dr. Jameel Ahmed Baig</i>
CHEM-754	Polymer Chemistry	2	<i>Prof. Shahabuddin Memon Dr. Huma Ishaque Shaikh</i>
CHEM-755	Electronics & Chemical Instrumentation	1	<i>Dr. Sarfaraz Ahmed Mahesar Dr. Ayaz Ali Memon</i>
CHEM-756	Environmental Analytical Chemistry	1	<i>Prof. S.M. Nizamani Dr. Amber R. Solangi</i>
CHEM-758	Thermal Methods	1	<i>Prof. T. G. Kazi</i>
CHEM-759	Scientific Writing in Analytical Chemistry	N.C	<i>Prof. T. G. Kazi Prof. Shahabuddin Memon</i>
Sub-Total		12	
Courses-Total		24	

- **Details of Courses Taught to Ph.D.**

Code	Course Title	CH	Teacher
1st Semester			
CHEM-900	Supramolecular Chemistry	2	<i>Prof. Shahabuddin Memon, Dr. Huma Ishaque Shaikh</i>
CHEM-901	Special Topics	1	<i>Concerned Supervisor</i>
CHEM-902	Food Analytical Chemistry	2	<i>Prof. T. G. Kazi, Dr. Farah Naz, Dr. Najma Memon, Dr. Sarfaraz Ahmed Mahesar</i>
CHEM-903	Advanced Chromatographic Techniques	2	<i>Dr. Najma Memon</i>
CHEM-904	Bioanalytical Chemistry	2	<i>Prof. T. G. Kazi, Prof. S. M. Nizamani, Dr. Farah Naz</i>
Sub-Total		9	
2nd Semester			
CHEM-905	Forensic Analytical Chemistry	2	<i>Prof. T. G. Kazi, Prof. S. M. Nizamani, Dr. Najma Memon</i>
CHEM-906	Advances in Analytical Spectroscopy	2	<i>Dr. Sarfaraz Ahmed Mahesar Dr. Ayaz Ali Memon</i>
CHEM-907	Advanced Electroanalytical Techniques	1	<i>Prof. Sirajuddin</i>
CHEM-908	Surface Characterization Techniques	2	<i>Dr. Amber R. Solangi</i>
CHEM-909	Green Analytical Chemistry	1	<i>Dr. Amber R. Solangi Prof. S. M. Nizamani</i>
CHEM-910	Chemoinformatics	1	<i>Dr. Hassan Imran Afridi Dr. Jameel Ahmed Baig</i>
Sub-Total		9	
Courses-Total		18	

• Faculty Seminars of Research Fellows During 2015

A total of 47 M. Phil and 20 Ph. D seminars of the Research scholars of this Centre were held during this period.

S.No	Name of Student Date of Seminar	Title of Seminar	Name of Supervisors
1.	Mr. Naemullah Final Ph.D. Seminar	Development of Advance Extraction Methods for the Determination of Metals in Different Environmental Samples	Prof. Tasneem Gul Kazi & Dr. Hassan Imran Afridi
2.	Ms. Sadaf Sadia Arain Final Ph.D. Seminar	Evaluation of trace and toxic elements in smokeless tobacco products and their artificial saliva extracts using advance extraction methodologies: related health risk.	Prof. Tasneem Gul Kazi, Dr. Hassan Imran Afridi
3.	Mr. Sham Kumar Wadhwa Final Ph.D. Seminar	Interaction of Essential Traces (Fe, Cu, Zn And Mn) And Toxic Elements (As, Cd, Pb And Ni) in Different Types of Cancer Patients.	Prof. Tasneem Gul Kazi, Dr. Hassan Imran Afridi
4.	Mr. Kapil Dev Brahman Final Ph.D. Seminar	Simultaneously evaluation of arsenic and fluoride levels in water of Thar region and thir removal by different materials: Impacts on human health	Prof. Tasneem Gul Kazi, Dr. Hassan Imran Afridi
5.	Ms. Sana Javaid Final Ph.D. Seminar	Assessment of adulterants in dairy milk	Dr. Farah Naz Talpur Prof. Shafi Muhammad Nizamani
6.	Ms. Tahira Qureshi Final Ph.D. Seminar	Hospital wastewater screening for selected pharmaceutical compounds and their removal by solid-phase extraction	Dr. Najma Memon Dr. Saima Qayoom Memon
7.	Mr. Razium Soomro Final Ph.D. Seminar	Synthesis, Characterization and applications of metal and metal oxide nanostructures	Prof. Sirajuddin, Dr. Najma Memon, Prof. Tufail Hussain Sherazi
8.	Mr. Sibghatullah Memon Final Ph.D. Seminar	Synthesis of sorbent material for the removal of persistent organic pollutants(POPs) from aqueous media	Prof. Shahabuddin Memon, Dr. Najma Memon
9.	Mr. Asif Ali Bhatti Final Ph.D. Seminar	Synthesis of Calix [4] Arene based Receptors for the Removal of Anions from Aqueous Media	Prof. Shahabuddin Memon, Dr. Najma Memon
10.	Mr. Zahid Hussain Shar Final Ph.D. Seminar	Determination of Mycotoxin Levels in Poultry Feeds	Prof. Muhammad Iqbal Bhangar, Prof. Sayed Tufail Hussain Sheerazi, Prof. Dr. Shafi Muhammad Nizamani
11.	Mr. Muhammad Ashraf Final Ph.D. Seminar	Adsorption of Pesticides on Soil Used for Okra Crop	Prof. Muhammad Iqbal Bhangar, Prof. Sayed Tufail Hussain Sheerazi,

			Prof. Dr. Shafi Muhammad Nizamani
12.	Mr. Muhammad Ali Mallah Final Ph.D. Seminar	Analytical Application of FT-IR Spectroscopy in the Pharmaceutical Industries	Prof. Sayed Tufail Hussain Sherazi, Prof. M. I. Bhangar, Dr. Sarfaraz Ahmed Mahesar
13.	Mr. Umair Qureshi Final Ph.D. Seminar	Use of New Material for the Removal of Phthalates by Solid Phase Extraction	Dr. Amber Solangi, Dr. Saima Memon, Dr. Iqleem Haider
14.	Ms. Salma Aslam Ph.D. 2 nd Seminar	Imbalance of Micrountrients in Scalp Hair of Hepatitis Patients	Prof. Tasneem Gul Kazi, Dr. Hassan Imran Afridi
15.	Mr. Jamshed Ali Ph.D. 2 nd Seminar	Chemical Analysis of Arsenic and Mercury in Coal of Thar Coalfield and Their Interaction with Adjoining Aquifer Water and Solid Matrices: An Environmental Impact Study.	Prof. Tasneem Gul Kazi, Dr. Hassan Imran Afridi & Dr. Jameel Ahmed Baig
16.	Mr. Abdul Haleem Panhwar Ph.D. 2 nd Seminar	Calcium and Magesium Contents in Scalp Hair of Subjects having Different Physiological Disorders	Prof. Tasneem Gul Kazi, Dr. Hassan Imran Afridi
17.	Ms. Mariam Shahzadi Ph.D. 2 nd Seminar	Evaluate the level of Aluminum and Manganese in scalp hair samples of human subjects having different neurological disorders	Dr. Hassan Imran Afridi,
18.	Mr. Gul Ameer Sumbal Ph.D. 2 nd Seminar	Decontanminatiopn of Poulrry Feed from Mycotaxins	Prof. Syed Tufail Hussain Sherazi, Prof. Muhammad Iqbal Bhangar, Prof. Shafi Muhammad Nizamani, Dr. Sarfaraz Ahmed Mahesar
19.	Ms. Farah Amin Ph.D. 2 nd Seminar	Biosorption of fluoride from aqueous system by fungal biomass	Dr. Farah Naz Talpur
20.	Mr. Muhammad Ali Surhio Ph.D. 2 nd Seminar	Biodegradation of phthalate esters by selected microorganisms	Dr. Farah Naz Talpur Prof. Shafi Muhammad Nizamani
21.	Ms. Ruqaya Sheikh M.Phil 2 nd Seminar	Preparation and characterization of Functional Metal-Nanoparticles and Their Application in Preconcentration/colorimetric Detection of Metal Ions.	Dr. Najma Memon Dr. Amber R. Solangi
22.	Mr. Abdul Sattar Chang M.Phil 2 nd Seminar	Isolation of valuable products from palm oil deodorizer distillate	Prof. Tufail Hussain Sherazi, Dr. Sarfaraz A. Mahesar, Dr. Aftab Ahmed Kandhro
23.	Ms. Saba Muneer M.Phil 1 st Seminar	Synthesis and bioactivity evaluation of some calix[n]arene derivatives	Prof. Shahabuddin Memon
24.	Ms. Fozia Chang M.Phil 1 st seminar	Synthesis, Characterization and Analytical Application of metal organic framework	Dr. Najma Memon, Prof. Shahabuddin Memon

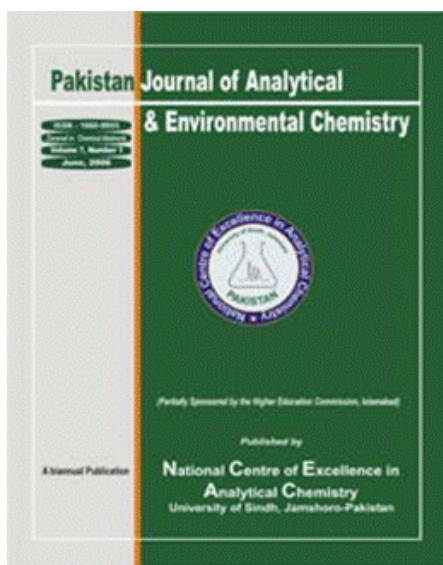
25.	Ms. Sanam Anam M.Phil 1 st seminar	Generation of Food Composition for Pakistan	Dr. Najma Memon, Prof. Shahabuddin Memon
26.	Ms. Samia Siddiqui M.Phil 1 st seminar	Bimetallic nanoparticles and their applications in sensors and catalysis	Prof. Sirajuddin, Dr. Farah Naz
27.	Ms. Marvi Kanwal Talpur M.Phil 1 st Seminar	Extraction, purification and Characterization of Anthocyanins from selected Indigenous Fruits of Sindh, Pakistan	Dr. Farah Naz, Prof. Shafi Muhammad Nizamani
28.	Ms. Shahneela Almani M.Phil 1 st Seminar	Omega-3 fatty acids and conjugated linoleic acid in fresh and processed meat market in Hyderabad	Dr. Farah Naz, Dr. Najma Memon
29.	Ms. Almas Fatima M.Phil 1 st Seminar	Determination of selected flavonoids from biological and natural samples using capillary electrophoresis	Dr. Amber R. Solangi, Dr. Saima Memon, Dr. Najma Memon
30.	Mr. Muneer Ahmed Mugheri M.Phil 1 st Seminar	The Level of Nickel and Cadmium in Blood and Pleural Fluid of Patients Having Lung Disorders.	Dr. Hassan Imran Afridi & Prof. Tasneem Gul Kazi
31.	Ms. Tahira Sarwar M.Phil 1 st Seminar	Synthesis of functional materials and their application as drug delivery systems	Prof. Shahabuddin Memon
32.	Ms. Safia Sanam M.Phil 1 st and 2 nd Seminar	Drug Based Synthesis of Precious Metal Nanoparticles and Their Application for Electrochemical Sensing.	Prof. Sirajuddin, Dr. Amber R. Solangi
33.	Ms. Saba Waris M.Phil 1 st and 2 nd Seminar	Microbial Production of Conjugated Linolenic Acid By Linolenic Acid	Dr. Farah Naz Talpur, Dr. Amber R. solangi
34.	Mr. Zakir Hussain M.Phil 1 st and 2 nd Seminar	Fabrication of electrospun ultrafine membranes for clean-up of preservatives	Dr. Najma Memon
35.	Ms. Paras Azadi M.Phil 1 st and 2 nd Seminar	Adsorptive Removal of Thiophenic Compounds from Hydrocarbon Fuel	Dr. Najma Memon, Dr. Amber R. Solangi
36.	Mr. Tarique Panhwar M.Phil 1 st and 2 nd Seminar	Production of biodiesel from blends of cotton and castor seed oil	Dr. Sarfaraz A. Mahesar, Dr. Aftab Ahmed Kandhro Dr. Farah Naz Talpur
37.	Mr. Zahid Hussain Laghari M.Phil 1 st and 2 nd Seminar	Essential oil characterization from the waste of pomegranate fruit	Prof. Tufail Hussain Sherazi, Prof. Sirajuddin, Dr. Sarfaraz A. Mahesar
38.	Mr. Manzar Khan Shaikh M.Phil 1 st and 2 nd Seminar	Assessment of toxic compounds in smokeless tobacco products available in hyderabad, sindh	Dr. Ayaz Memon
39.	Ms. Roomia Memon M.Phil 1 st and 2 nd Seminar	Nutrient profiling of wheat varieties in sindh	Dr. Ayaz Memon, Dr. Najma Memon
40.	Mr. Anwar Ali Chandio M.Phil 1 st and 2 nd Seminar	Synthesis of calix[4]aren metal complex and their application	Prof. Shahbuddin Memon Dr. Ayaz Memon
41.	Mr. Muhammad Waris M.Phil 1 st and 2 nd Seminar	Evaluation of roxarson in poultry feed and litter	Dr. Jamil Ahmed Baig
42.	Mr. Muhammad Kashif	Chromium speciation and remediation	Dr. Jamil Ahmed Baig

	Channa M.Phil 1 st Seminar	in industrial effluents	
43.	Ms. Nusrat Shahab Memon M.Phil 1 st and 2 nd Seminar	Evaluation of Calcium, Iron, Manganese and Lead in the biological samples of Thyroid Patients.	Prof. Tasneem Gul Kazi, Dr. Jameel Ahmed Baig
44.	Mr. Oan Muhammad M.Phil 2 nd Seminar	Study of poultry waste as a source of heavy metals to vegetables	Prof. Tasneem Gul Kazi, Dr. Jameel Ahmed Baig
45.	Mr. Shah Nawaz Balouch M.Phil 1 st and 2 nd Seminar	Evaluation lithium levels in drinking water and scalp hair samples of psychiatric patients	Prof. Tasneem Gul Kazi, Dr. Jameel Ahmed Baig
46.	Ms. Shazia Bhurguri M.Phil 1 st and 2 nd Seminar	Biodegradation of engine oil by selected microorganisms	Dr. Farah Naz, Prof. Shafi Muhammad Nizamani
47.	Ms. Aamna Khatoon M.Phil 1 st and 2 nd Seminar	Development of capillary electrophoresis method for the determination of skin whitening agents in cosmetic products	Dr. Amber R. Solangi Dr. Najma Memon
48.	Ms. Shabana Gul Mugheri M.Phil 1 st and 2 nd Seminar	Phytochemical and antioxidant study <i>ocimum Basilicum</i> (sweet basil)	Prof. Shahabuddin Memon, Dr. Najma Memon
49.	Ms. Sadia Shakeel M.Phil 1 st and 2 nd Seminar	Fabrication of gold nanoparticles and their applications	Dr. Hassan Imran Afridi, Prof. Tasneem Gul Kazi, Prof. Sirajuddin, Dr. Farah Naz Talpur
50.	Ms. Erum Akhund M.Phil 1 st and 2 nd Seminar	Synthesis and Characterization of Nickel Nano Particles and Their Applications	Dr. Amber R. Solangi Prof. Sirajuddin

Journals Published During 2015

PAKISTAN JOURNAL OF ANALYTICAL & ENVIRONMENTAL CHEMISTRY Volume 16 No. 1 & 2, 2015

Two issue of the **Pakistan Journal of Analytical and Environmental Chemistry** had been brought in time. The copies of the journal were issued to all Universities and R&D organizations in the country and few abroad. The journal has now been recognized by the Higher Education Commission in “Y” category.



Available on line: <http://www.ceacsu.edu.pk/JOURNAL-1.htm>

: Directory of World Open Access Journals

LIST OF RESEARCH PAPERS PUBLISHED IN 2015

IN NATIONAL/INTERNATIONAL JOURNALS

1. Afridi H, Kazi T, Talpur F, Kazi A, Arain S, Arain S, et al. Assessment of selenium and mercury in biological samples of normal and night blindness children of age groups (3–7) and (8–12) years. *Environ Monit Assess.* 2015;187(3):1-11.
2. Afridi H, Talpur F, Kazi T, Brabazon D. Estimation of toxic elements in the samples of different cigarettes and their effect on the essential elemental status in the biological samples of Irish smoker rheumatoid arthritis consumers. *Environ Monit Assess.* 2015;187(4):1-16.
3. Afridi H, Talpur F, Kazi T, Brabazon D. Effect of Trace and Toxic Elements of Different Brands of Cigarettes on the Essential Elemental Status of Irish Referent and Diabetic Mellitus Consumers. *Biol Trace Elem Res.* 2015;167(2):209-24.
4. Afridi H, Talpur F, Kazi T, Kazi N, Arain S, Shah F. Estimation of calcium, magnesium, cadmium, and lead in biological samples from paralyzed quality control and production steel mill workers. *Environ Monit Assess.* 2015;187(6):1-11.
5. Afridi HI, Kazi TG, Talpur FN, Brabazon D. Estimation of aluminum, arsenic, lead and nickel status in the samples of different cigarettes and their effect on human health of Irish smoker hypertensive consumers *Clinical Laboratory.* 2015;61(9):1147-56.
6. Afridi HI, Kazi TG, Talpur FN, Naher S, Brabazon D. Evaluation of trace and toxic elements in the samples of different cigarette and their impact on human health of diabetes mellitus patients. *Clinical Laboratory* 2015;61:123-40.
7. Afridi HI, Talpur FN, Kazi TG, Brabazon D. Assessment of toxic elements in the samples of different cigarettes and their effect on the essential elemental status in the biological samples of Irish hypertensive consumers. *J Hum Hypertens.* 2015;29(5):309-15.
8. Ali J, Kazi T, Baig J, Afridi H, Arain M, Brahman K, et al. Arsenic in coal of the Thar coalfield, Pakistan, and its behavior during combustion. *Environ Sci Pollut Res.* 2015;22(11):8559-66.
9. Ali J, Kazi T, Baig J, Afridi H, Arain M, Ullah N, et al. Evaluation of the fate of arsenic-contaminated groundwater at different aquifers of Thar coalfield Pakistan. *Environ Sci Pollut Res.* 2015;22(23):19251-63.
10. Ali J, Kazi TG, Baig JA, Afridi HI, Arain MS, Ullah N, et al. Monitoring of arsenic fate with proximate parameters and elemental composition of coal from Thar coalfield, Pakistan. *Journal of Geochemical Exploration.* 2015;159:227-33.
11. Ameer Sumbal G, Hussain Shar Z, Hussain Sherazi ST, Sirajuddin, Nizamani SM, Mahesar SA. Decontamination of poultry feed from ochratoxin A by UV and sunlight radiations. *Journal of the Science of Food and Agriculture.* 2015:n/a-n/a.
12. Amin F, Talpur FN, Balouch A, Surhio MA, Bhutto MA. Biosorption of fluoride from aqueous solution by white—rot fungus *Pleurotus eryngii* ATCC 90888. *Environmental Nanotechnology, Monitoring & Management.* 2015;3:30-7.

13. Arain M, Afridi H, Kazi T, Kazi A, Naeemullah, Ali J, et al. Variation in the Levels of Aluminum and Manganese in Scalp Hair Samples of the Patients Having Different Psychiatric Disorders with Related to Healthy Subjects. *Biol Trace Elem Res.* 2015;168(1):67-73.
14. Arain M, Afridi H, Kazi T, Talpur F, Arain M, Kazi A, et al. Correlation of aluminum and manganese concentration in scalp hair samples of patients having neurological disorders. *Environ Monit Assess.* 2015;187(2):1-10.
15. Arain M, Kazi T, Baig J, Afridi H, Sarajuddin, Brehman K, et al. Co-exposure of arsenic and cadmium through drinking water and tobacco smoking: Risk assessment on kidney dysfunction. *Environ Sci Pollut Res.* 2015;22(1):350-7.
16. Arain MS, Arain SA, Kazi TG, Afridi HI, Ali J, Naeemullah, et al. Temperature controlled ionic liquid-based dispersive micro-extraction using two ligands, for determination of aluminium in scalp hair samples of Alzheimer's patients: A multivariate study. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy.* 2015;137:877-85.
17. Arain S, Kazi T, Afridi H, Brahman K, Naeemullah, Khan S, et al. Preconcentration and determination of lead and cadmium levels in blood samples of adolescent workers consuming smokeless tobacco products in Pakistan. *Environ Monit Assess.* 2015;187(5):1-13.
18. Arain S, Kazi T, Afridi H, Talpur F, Kazi A, Brahman K, et al. Correlation of Arsenic Levels in Smokeless Tobacco Products and Biological Samples of Oral Cancer Patients and Control Consumers. *Biol Trace Elem Res.* 2015;168(2):287-95.
19. Arain S, Kazi T, Arain A, Afridi H, Arain M, Brahman K, et al. Estimation of lead in biological samples of oral cancer patients chewing smokeless tobacco products by ionic liquid-based microextraction in a single syringe system. *Environ Sci Pollut Res.* 2015;22(16):12396-406.
20. Arain S, Kazi T, Arain A, Afridi H, Brahman K, Naeemullah, et al. Evaluated the Levels of Lead and Cadmium in Scalp Hair of Adolescent Boys Consuming Different Smokeless Tobacco Products with Related to Controls. *Biol Trace Elem Res.* 2015;164(2):178-84.
21. Arain SA, Kazi TG, Afridi HI, Abbasi AR, Ullah N, Panhwar AH, et al. Determination of trace levels of iron in serum samples of hepatitis B and C patients using dispersive liquid-liquid microextraction. *Analytical Methods.* 2015;7(21):9211-7.
22. Arain SA, Kazi TG, Afridi HI, Ullah N, Arain MS, Panhwar AH. Development of miniaturized solid phase microextraction of copper in serum using a micropipette tip in-syringe system combined with micro sampling flame atomic absorption spectrometry. *Analytical Methods.* 2015;7(8):3431-7.
23. Arain SQ, Talpur FN, Channa NA. A comparative study of serum lipid contents in pre and post IFN-alpha treated acute hepatitis C patients. *Lipids in Health and Disease.* 2015;14(1):1-9.
24. Arain SQ, Talpur FN, Channa NA, Khan R. Clinical Evaluation and Serum Lipid Profile between Individuals with Acute Hepatitis C. *International Journal of Biochemistry Research & Review.* 2015;6(1):37-45.

25. Arain SS, Kazi TG, Afridi HI, Talpur FN, Kazi AG, Brahman KD, et al. Estimation of Nickel in Different Smokeless Tobacco Products and Their Impact on Human Health of Oral Cancer Patients. *Nutrition and Cancer*. 2015;67(7):1063-74.
26. Arain SS, Kazi TG, Afridi HI, Talpur FN, Kazi AG, Brahman KD, et al. Scalp hair and blood cadmium levels in association with chewing gutkha, mainpuri, and snuff, among patients with oral cancer in Pakistan. *Journal of oral pathology and medicine*. 2015;44(9):707-13.
27. Arain SS, Kazi TG, Arain AJ, Afridi HI, Baig JA, Brahman KD, et al. Temperature-controlled ionic liquid-based ultrasound-assisted microextraction for preconcentration of trace quantity of cadmium and nickel by using organic ligand in artificial saliva extract of smokeless tobacco products. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*. 2015;138:387-94.
28. Arslan FN, Kara H, Talpur MY, Sherazi STH. A Chemometric Approach to Assess the Frying Stability of Cottonseed Oil Blends During Deep-Frying Process: Fatty Acid Composition and Tocopherol Analyses. *International Journal of Food Properties*. 2015;18(12):2776-90.
29. Ayyildiz HF, Topkafa M, Kara H, Sherazi STH. Evaluation of Fatty Acid Composition, Tocols Profile, and Oxidative Stability of Some Fully Refined Edible Oils. *International Journal of Food Properties*. 2015;18(9):2064-76.
30. Bajeer MA, Mallah MA, Sherazi STH, Bhangar MI, Nizamani SM. Investigation of Dissipation, Adsorption, Degradation, and Leaching of Triazophos Pesticide in Various Soils. *Polycyclic Aromatic Compounds*. 2015:1-13.
31. Balouch A, Ali Umar A, Mawarnis ER, Md Saad SK, Mat Salleh M, Abd Rahman MY, et al. Synthesis of Amorphous Platinum Nanofibers Directly on an ITO Substrate and Its Heterogeneous Catalytic Hydrogenation Characterization. *ACS Applied Materials & Interfaces*. 2015;7(14):7776-85.
32. Balouch Q, Ibutoto Z, Khaskheli G, Soomro R, Sirajuddin, Samoon M, et al. Cobalt Oxide Nanoflowers for Electrochemical Determination of Glucose. *Journal of Elec Materi*. 2015;44(10):3724-32.
33. Brahman K, Kazi T, Afridi H, Arain S, Kazi A, Talpur F, et al. Toxic Risk Assessment of Arsenic in Males Through Drinking Water in Tharparkar Region of Sindh, Pakistan. *Biol Trace Elem Res*. 2015:1-11.
34. Chandio ZA, Talpur FN, Khaskheli MI, Khaskheli GQ, Khuhawar MY, Malhi JK, et al. Solid Phase Extraction of Cu (I) by Bathocuproine Modified on Naphthalene Prior to Flame Atomic Absorption Spectrometric Determination. *Analytical Chemistry Letters*. 2015;5(4):183-91.
35. Channa MJ, Ghanghro AB, Sheikh SA, Nizamani SM. Physico-Chemical Characteristics and Rheological Properties of Different Wheat Varieties Grown in Sindh. *Pakistan Journal of Analytical and Environmental Chemistry*. 2015;16(2):11-8.
36. Demir E, Laghari AH, Sökmen M, Memon S. Antioxidant Activity of Alhagi camelorum Phenolics Extracted by Automated and Standard Extraction Techniques. *Separation Science and Technology*. 2015;50(4):529-35.

37. Durmaz F, Memon FN, Memon S, Memon AA, Memon NA, Kara H. Copper sorption efficiency of p-tetranitrocalix[4]arene based high performance liquid chromatographic column. *Desalination and Water Treatment*. 2015:1-7.
38. Ghanghro AB, Channa MJ, Sheikh SA, Ghanghro IH, Nizamani SM. Significant reduction of aflatoxin level by solar irradiation in stored wheat (*Triticum aestivum* L.). *International Journal of Biology, Pharmacy and Allied Sciences*. 2015;4(12):6628-38.
39. Hassan SS, Nafady A, Sirajuddin, Solangi AR, Kalhor MS, Abro MI, et al. Ultra-trace level electrochemical sensor for methylene blue dye based on nafion stabilized ibuprofen derived gold nanoparticles. *Sensors and Actuators B: Chemical*. 2015;208:320-6.
40. Ibpoto ZH, Nafady A, Soomro RA, Sirajuddin, Hussain Sherazi ST, Abro MI, et al. Glycine-assisted synthesis of NiO hollow cage-like nanostructures for sensitive non-enzymatic glucose sensing. *RSC Advances*. 2015;5(24):18773-81.
41. Ihsan M, Niaz A, Rahim A, Zaman MI, Arain MB, Sirajuddin, et al. Biologically synthesized silver nanoparticle-based colorimetric sensor for the selective detection of Zn²⁺. *RSC Advances*. 2015;5(111):91158-65.
42. Jamali MK, Kazi AG, Baig JA, Afridi HI, Arain MB. Evaluation of heavy metals in soil and vegetables and their correlation with properties of different. *Journal of Basic and Applied Research International*. 2015;4(4):2395-3438.
43. Jamali MK, Kazi TG, Baig JA, Afridi HI, Sirajuddin, Arain MB. Evaluation of heavy metals in vegetables and their correlation with properties of different soils. *J Bas Appl Res Int* 2015;4(4):166-77.
44. Jawaid S, Talpur F, Nizamani S, Memon N, Afridi H, Khaskheli A. Rapid In Situ Esterification Method for the Determination of Benzoic Acid in Dairy Milk by GC-FID. *Food Anal Methods*. 2015;8(6):1477-83.
45. Jawaid S, Talpur FN, Nizamani SM, Afridi HI. Contamination profile of aflatoxin M1 residues in milk supply chain of Sindh, Pakistan. *Toxicology Reports*. 2015;2:1418-22.
46. Jawaid S, Talpur FN, Nizamani SM, Memon NN, Khaskheli AA. Quantification of oxytocin residues in dairy milk from Sindh, Pakistan. *International Journal of Food Science & Technology*. 2015;50(7):1640-3.
47. Kalwar N, Nafady A, Soomro R, Sirajuddin, Sherazi S, Khaskheli A, et al. Microwave-assisted synthesis of L-cysteine-capped nickel nanoparticles for catalytic reduction of 4-nitrophenol. *Rare Met*. 2015;34(10):683-91.
48. Kalwar NH, Nafady A, Sirajuddin, Sherazi STH, Soomro RA, Hallam KR, et al. Catalytic degradation of imidacloprid using L-serine capped nickel nanoparticles. *Materials Express*. 2015;5(2):121-8.
49. Kamboh MA, Chang AS, Wan Ibrahim WA, Sanagi MM, Mahesar SA, Sirajuddin, et al. A green method for the quantitative assessment of neutral oil in palm fatty acid distillates by single bounce attenuated total reflectance Fourier-transform infrared spectroscopy. *RSC Advances*. 2015;5(62):50591-6.

50. Kazi T, Wadhwa S, Afridi H, Talpur F, Tuzen M, Baig J. Comparison of essential and toxic elements in esophagus, lung, mouth and urinary bladder male cancer patients with related to controls. *Environ Sci Pollut Res.* 2015;22(10):7705-15.
51. Kazi TG, Shah F, Afridi HI, Naeemullah. Occupational and environmental lead exposure to adolescent workers in battery recycling workshops. *Toxicology and Industrial Health* 2015;31(12):1288-95.
52. Khan S, Kazi TG, Soylak M. Ionic Liquid-Based Ultrasound-Assisted Emulsification Microextraction of Cadmium in Biological Samples: Optimization by a Multivariate Approach. *Analytical Letters.* 2015;48(11):1751-66.
53. Khan S, Kazi TG, Soylak M. A green and efficient in-syringe ionic liquid-based single step microextraction procedure for preconcentration and determination of cadmium in water samples. *Journal of Industrial and Engineering Chemistry.* 2015;27:149-52.
54. Khaskhel AA, Talpur FN, Ashraf MA, Cebeci A, Jawaid S, Afridi HI. Monitoring the *Rhizopus oryzae* lipase catalyzed hydrolysis of castor oil by ATR-FTIR spectroscopy. *Journal of Molecular Catalysis B: Enzymatic.* 2015;113:56-61.
55. Maheshwari ML, Memon AA, Memon S, Memon F-u-N, Mughal UUR, Dayo A, et al. Optimization of HPLC method for determination of cefixime using 2-thiophenecarboxaldehyde as derivatizing reagent: A new approach. *Saudi Pharmaceutical Journal.* 2015;23(4):444-52.
56. Mallah MA, Sherazi STH, Bhangar MI, Mahesar SA, Bajeer MA. A rapid Fourier-transform infrared (FTIR) spectroscopic method for direct quantification of paracetamol content in solid pharmaceutical formulations. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy.* 2015;141:64-70.
57. Memon AA, Solangi AR, Memon S, Bhatti AA, Bhatti AA. Highly Selective Determination of Perchlorate by a Calix[4]arene based Polymeric Membrane Electrode. *Polycyclic Aromatic Compounds.* 2015:1-14.
58. Memon AF, Solangi AR, Memon SQ, Mallah A, Memon N. A MEKC method for naringenin from natural and biological samples. *Analytical Methods.* 2015;7(11):4521-7.
59. Memon FN, Ayyilidiz HF, Kara H, Memon S, Kenar A, Leghari MK, et al. Application of central composite design for the optimization of on-line solid phase extraction of Cu²⁺ by calix[4]arene bonded silica resin. *Chemometrics and Intelligent Laboratory Systems.* 2015;146:158-68.
60. Memon FN, Memon S. Sorption and Desorption of Basic Dyes from Industrial Wastewater Using Calix[4]arene Based Impregnated Material. *Separation Science and Technology.* 2015;50(8):1135-46.
61. Memon FN, Memon S, Minhas FT. Calix[4]arene-mediated uphill transport of methyl red through bulk liquid membrane: kinetics of operational variables. *Desalination and Water Treatment.* 2015:1-14.
62. Memon N, Kazi T, Afridi H, Baig J, Arain S, Sahito O, et al. Evaluation of calcium and lead interaction, in addition to their impact on thyroid functions in hyper and hypothyroid patients. *Environ Sci Pollut Res.* 2015:1-9.

63. Memon N, Kazi T, Afridi H, Baig J, Sahito O, Baloch S, et al. Correlation of manganese with thyroid function in females having hypo- and hyperthyroid disorders. *Biol Trace Elem Res.* 2015;167(2):165-71.
64. Memon S, Bhatti A, Bhatti A. Sorption of As(III) by calix[4]arene modified XAD-4 resin: kinetic and thermodynamic approach. *J IRAN CHEM SOC.* 2015;12(4):727-35.
65. Memon S, Bhatti A, Bhatti A, Ocak Ü, Ocak M. Synthesis and chromogenic behavior exploration of a new calix[4]arene derivative. *J IRAN CHEM SOC.* 2015;12(10):1739-46.
66. Memon S, Bhatti A, Bhatti A, Ocak Ü, Ocak M. Calix[4]arene Based Highly Efficient Fluorescent Sensor for Au³⁺ and I⁻. *J Fluoresc.* 2015;25(5):1507-15.
67. Memon S, Bhatti AA, Ocak U, Ocak M. New calix[4]arene based highly selective fluorescent probe for Al³⁺ and I. *Analytical Methods.* 2015;7(12):5114-21.
68. Memon S, Bhatti AA, Ocak Ü, Ocak M. Cu²⁺ Selective Chromogenic Behavior of Calix[4]arene Derivative. *Polycyclic Aromatic Compounds.* 2015:1-15.
69. Memon S, Memon N, Memon S. Removal of carbofuran and methylparathion from aqueous media through calix[4]arene-based impregnated resin. *Desalination and Water Treatment.* 2015;54(3):802-12.
70. Muneer S, Memon S, Panhwar QK, Khushik F, Khokhar TS, Noor AA. Synthesis and Antimicrobial Activity of p-tetranitrocalix[4]arene Derivative. *Polycyclic Aromatic Compounds.* 2015:1-10.
71. Naeemullah, Kazi TG, Afridi HI, Shah F, Arain SS, Brahman KD, et al. Simultaneous determination of silver and other heavy metals in aquatic environment receiving wastewater from industrial area, applying an enrichment method. *Arabian Journal of Chemistry.* 2015.
72. Naeemullah, Kazi TG, Tuzen M. Magnetic stirrer induced dispersive ionic-liquid microextraction for the determination of vanadium in water and food samples prior to graphite furnace atomic absorption spectrometry. *Food Chemistry.* 2015;172:161-5.
73. Naeemullah, Shah F, Kazi TG, Afridi IH, Khan AR, Arain SS, et al. Switchable dispersive liquid-liquid microextraction for lead enrichment: A green alternative to classical extraction techniques. *Analytical Methods.* 2015.
74. Nizamani IA, Rustamani MA, Nizamani SM, Nizamani SA, Khaskheli MI. Population Density of Foliage Insect Pest on Jujube, *Ziziphus mauritiana* Lam. Ecosystem. *Journal of Basic and Applied Sciences.* 2015;11:304-13.
75. Panhwar A, Kazi T, Afridi H, Arain S, Arain M, Brahman K, et al. Correlation of cadmium and aluminum in blood samples of kidney disorder patients with drinking water and tobacco smoking: related health risk. *Environ Geochem Health.* 2015:1-10.
76. Panhwar A, Kazi T, Afridi H, Arain S, Arain M, Brahman K, et al. Comparative evaluation of essential and toxic elements in the blood of kidney failure patients and healthy referents. *Environ Monit Assess.* 2015;187(2):1-11.
77. Panhwar AH, Kazi TG, Afridi HI, Arain SA, Naeemullah, Brahman KD, et al. A new solid phase microextraction method using organic ligand in micropipette tip syringe system packed with modified carbon cloth for preconcentration of cadmium in drinking water and

- blood samples of kidney failure patients. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*. 2015;138:296-302.
78. Parveen S, Siyal AN, Memon N, Memon SQ, Khuhawar MY. Extraction and Determination of Phenolic Acids and Vitamin B of Sieved and Unsieved Wheat Grain by MEKC. *Journal of Liquid Chromatography & Related Technologies*. 2015;38(1):143-52.
 79. Qureshi MS, Mohd Yusoff ARb, Shah A, Nafady A, Sirajuddin. A new sensitive electrochemical method for the determination of vanadium(IV) and vanadium(V) in Benfield sample. *Talanta*. 2015;132:541-7.
 80. Qureshi MS, Yusoff ARbM, Wirzal MDH, Sirajuddin, Berek J, Afridi HI, et al. Methods for the determination of endocrine disrupting phthalate esters. *Critical Reviews in Analytical Chemistry*. 2015:00-.
 81. Qureshi T, Memon N, Memon SQ, Ashraf MA. Decontamination of ofloxacin: optimization of removal process onto sawdust using response surface methodology. *Desalination and Water Treatment*. 2015;57(1):221-9.
 82. Qureshi UA, Gubbuk IH, Ersoz M, Solangi AR, Taqvi SIH, Memon SQ. Preparation of polyaniline montmorillonite clay composites for the removal of diethyl hexyl phthalate from aqueous solutions. *Separation Science and Technology*. 2015:1-15.
 83. Safdar M, Junejo Y, Balouch A. Efficient degradation of organic dyes by heterogeneous cefdinir derived silver nanocatalyst. *Journal of Industrial and Engineering Chemistry*. 2015;31:216-22.
 84. Sahito OM, Afridi HI, Kazi TG, Baig JA. Evaluation of heavy metal bioavailability in soil amended with poultry manure using single and BCR sequential extractions. *International Journal of Environmental Analytical Chemistry*. 2015;95(11):1066-79.
 85. Shah MT, Balouch A, Rajar K, Sirajuddin, Brohi IA, Umar AA. Selective Heterogeneous Catalytic Hydrogenation of Ketone (C=O) to Alcohol (OH) by Magnetite Nanoparticles Following Langmuir–Hinshelwood Kinetic Approach. *ACS Applied Materials & Interfaces*. 2015;7(12):6480-9.
 86. Shaikh H, Andac M, Memon N, Bhanger MI, Nizamani SM, Denizli A. Synthesis and characterization of molecularly imprinted polymer embedded composite cryogel discs: application for the selective extraction of cypermethrins from aqueous samples prior to GC-MS analysis. *RSC Advances*. 2015;5(34):26604-15.
 87. Shaikh H, Sener G, Memon N, Bhanger MI, Nizamani SM, Uzek R, et al. Molecularly imprinted surface plasmon resonance (SPR) based sensing of bisphenol A for its selective detection in aqueous systems. *Analytical Methods*. 2015;7(11):4661-70.
 88. Shaikh T, Nafady A, Talpur FN, Sirajuddin, Agheem MH, Shah MR, et al. Tranexamic acid derived gold nanoparticles modified glassy carbon electrode as sensitive sensor for determination of nalbuphine. *Sensors and Actuators B: Chemical*. 2015;211:359-69.
 89. Shar ZH, Sumbal GA, Sherazi STH, Kara H, Hussain M, Bhanger MI. Determination of Ochratoxin A in Poultry Feed by High-Performance Liquid Chromatography with a Monolithic Column. *Analytical Letters*. 2015;48(3):396-407.

90. Sharif T, Niaz A, Najeeb M, Zaman MI, Ihsan M, Sirajuddin. Isonicotinic acid hydrazide-based silver nanoparticles as simple colorimetric sensor for the detection of Cr³⁺. *Sensors and Actuators B: Chemical*. 2015;216:402-8.
91. Wadhwa SK, Kazi TG, Afridi HI, Talpur FN, Naeemullah. Interaction between carcinogenic and anti-carcinogenic trace elements in the scalp hair samples of different types of Pakistani female cancer patients. *Clinica Chimica Acta*. 2015;439:178-84.
92. Sherazi STH, Shar ZH, Sumbal GA, Tan E, Bhangar MI, Kara H, et al. Occurrence of ochratoxin A in poultry feeds and feed ingredients from Pakistan. *Mycotoxin Res*. 2015;31(1):1-7.
93. Soomro R, Baloach Q, Tahira A, Ibupoto Z, Khaskheli G, Sirajuddin, et al. Rice-like CuO nanostructures for sensitive electrochemical sensing of hydrazine. *Microsyst Technol*. 2015:1-8.
94. Soomro R, Ibupoto Z, Sirajuddin, Abro M, Willander M. Controlled synthesis and electrochemical application of skein-shaped NiO nanostructures. *J Solid State Electrochem*. 2015;19(3):913-22.
95. Soomro R, Ibupoto Z, Sirajuddin, Sherazi S, Abro M, Willander M. Practice of diclofenac sodium for the hydrothermal growth of NiO nanostructures and their application for enzyme free glucose biosensor. *Microsyst Technol*. 2015:1-9.
96. Soomro R, Perçin I, Memon N, Iqbal Bhangar M, Denizli A. Gelatin-loaded p(HEMA-GMA) cryogel for high-capacity immobilization of horseradish peroxidase. *Artificial Cells, Nanomedicine, and Biotechnology*. 2015:1-6.
97. Soomro RA, Hallam KR, Ibupoto ZH, Tahira A, Jawaid S, Hussain Sherazi ST, et al. A highly selective and sensitive electrochemical determination of melamine based on succinic acid functionalized copper oxide nanostructures. *RSC Advances*. 2015;5(127):105090-7.
98. Soomro RA, Ibupoto ZH, Sirajuddin, Abro MI, Willander M. Electrochemical sensing of glucose based on novel hedgehog-like NiO nanostructures. *Sensors and Actuators B: Chemical*. 2015;209:966-74.
99. Soomro RA, Ibupoto ZH, Sirajuddin, Sherazi STH, Abro MI, Willander M, et al. Glycine-assisted preparation of Co₃O₄ nanoflakes with enhanced performance for non-enzymatic glucose sensing. *Materials Express*. 2015;5(5):437-44.
100. Soomro RA, Nafady A, Ibupoto ZH, Sirajuddin, Sherazi STH, Willander M, et al. Development of sensitive non-enzymatic glucose sensor using complex nanostructures of cobalt oxide. *Materials Science in Semiconductor Processing*. 2015;34:373-81.
101. Soomro RA, Nafady A, Sirajuddin, Sherazi STH, Kalwar NH, Shah MR, et al. Catalytic Reductive Degradation of Methyl Orange Using Air Resilient Copper Nanostructures. *Journal of Nanomaterials*. 2015;2015:12.
102. Talpur MY, Hassan SS, Mahesar SA, Kandhro AA, Kara H, Sherazi STH, et al. Rapid Determination of Trans Fats in Thermally Oxidized Soybean Oil by Transmission FT-IR Spectroscopy. *American Journal of Food Science and Technology*. 2015;3(1):19-23.
103. Talpur MY, Hassan SS, Sherazi STH, Mahesar SA, Kara H, Kandhro AA, et al. A simplified FTIR chemometric method for simultaneous determination of four oxidation

- parameters of frying canola oil. *Spectrochim Acta A Mol Biomol Spectrosc.* 2015;149:656-61.
104. Tarhan I, Ayyildiz HF, Topkafa M, Arslan FN, Tas A, Sherazi STH, et al. Chemical and Spectroscopic Characterization of Humic Acid Isolated from Ilgin Lignite, Turkey. *International Journal of Scientific and Technological Research.* 2015;1(1):176-483.
105. Topkafa M, Kara H, Sherazi S. Evaluation of the Triglyceride Composition of Pomegranate Seed Oil by RP-HPLC Followed by GC-MS. *J Am Oil Chem Soc.* 2015;92(6):791-800.
106. Veesar IA, Solangi IB, Memon S. Immobilization of α -amylase onto a calix[4]arene derivative: Evaluation of its enzymatic activity. *Bioorganic Chemistry.* 2015;60:58-63.

Book Chapter

S. T. H. Sherazi, **S. A. Mahesar.** *Analysis of Edible Oils and Fats by Nuclear Magnetic Resonance (NMR) Spectroscopy*, in: A. Rahman, M. I. Choudhary (Eds), *Application of NMR Spectroscopy in Food Science*, Bentham Science Publishers, 2015, Volume 1, Pages 57-92. **ISBN: 78-1-60805-963-8**