



FACULTY BIODATA FOR NED UET WEB PORTAL

Name	Engr. Dr. Abdul Shakoor Khan Pathan s/o Shamroz Khan	
Designation	Professor BPS-21 Commander Pakistan Navy (Retiring on 13 August 2009)	
Department	Automotive and Marine Engineering	
Contact No.	+9221-9261261 ...68 Ext.2239 Cell. +92-333-3971590 Email: shakoopathan@yahoo.com Fax: +9221-9261255 URL: http://www.neduet.edu.pk	
Professional Engineer (PE), Pakistan Engineering Council (PEC)	Mech.2952 dated 12 Sep.1981)	
Date & Place of Birth	15th August 1955	Wardag, West Banda, Nartopa, Hazro, Attock, Rawalpindi Region, Punjab, Pakistan

QUALIFICATION	
Degree/ Diploma / Certificate	Institution/ Industry
B.E. Mech.Engg. 1975	NED ENGINEERING COLLEGE, KARACHI UNIVERSITY (NEDUET), University Road, Karachi, Pakistan
OJT in Steel Mills 1978	Nine months training in 5-million-ton-capacity integrated steel mills in “Zaporozhstal”, Zaporozhye, Ukraine (USSR) sponsored by Pakistan Steel Mills Corporation and “Tyazh-Prom-Export”.
M.S. Mech. Engg. 1983	ODESSA TECHNOLOGICAL INSTITUTE OF REFRIGERATION INDUSTRY (OTIKhP: Odesskii Tekhnologicheskii Institut Kholodilnoy Promishlennosti), 1/3 Petra Velikovo, Odessa, Ukraine (USSR). Now renamed “Odessa State Academy of Refrigeration (OSAR)”.
Diploma in Russian Language Teaching 1983	Passed qualification examination of Higher Education Commission (VAK = <i>Viyshaya Atestatsionnaya Kommissiya</i>) of Ministry of Higher Education Moscow USSR (now Russian Federation).
PhD Mech. Engg. 1988	ODESSA TECHNOLOGICAL INSTITUTE OF REFRIGERATION INDUSTRY (OTIKhP), 1/3 Petra Velikovo, Odessa, Ukraine (USSR). Now renamed “Odessa State Academy of Refrigeration (OSAR)”.
PROJECT / THESIS / RESEARCH / SPECIALITY DETAILS	
<p><u>PhD (Mech. Engg.)</u></p> <p>Topic: Frost Formation and Heat Mass Transfer in Profiled Channels of Roll-Bonded Air Coolers</p> <p>Specialty-1: Course Code: 05.04.03, Refrigerating, Air-conditioning, Cryogenic Engineering.</p> <p>Specialty-2: Course Code: 05.14.05, Thermal Engineering Sciences.</p> <p><u>MS (Mech. Engg.)</u></p> <p>Topic: Design of Low Temperature Cascade Refrigeration Machine for Testing and Storage of Materials and Bio-products.</p> <p>Specialty: Course Code: 0529, Refrigerating and Compression Machine</p> <p><u>BE (Mech. Engg.)</u></p> <p>Topic: Design of one-ton open-die-forging compressed air powered hammer.</p> <p>Specialty: Mechanical Engineering, Forging Machines Design, Pressure Working of Metal</p> <p><u>On-Job-Training in “Zaporozhstal” Steel Plant, Zaporozhye, Ukraine, USSR - 1978</u></p>	

Topic:

1. Process Design and Production of Forgings for Repair-Shops of 5- Million-Ton-Capacity Integrated Steel Plant.
2. Design and Fabrication of Process-Steel-Structure for Repair-shops of 5-million-ton-Capacity Integrated Steel Plant.

Specialty:

Block of Forging and Fabrication of Repair Shops Complex of Integrated Steel Plant.

RESEARCH AREA

Heat mass transfer in refrigeration and air conditioning. Design and make refrigeration equipment and heat exchangers. Development of energy efficient heat exchange equipment and machines for heating, ventilating, air conditioning and refrigeration (HVACR). Design and make machines and systems for storage/transportation/dispensing/processing of perishable food. Commercial and industrial refrigeration systems. Automotive vehicle thermal management systems

PROFESSIONAL CONSULTING

1. Building Services:

Design, specification, tender documentation, construction supervision, testing, commissioning of building services in compliance with ASHRAE codes and Standards, CIBSE guides, Carrier Design Manual and other national & international codes and standards.

Building Services types:

HVACR, plumbing, cold water, hot water, drainage, fire fighting, drip irrigation, fountains, swimming pools, saunas, kitchen, laundry

Building types:

Residential, commercial, public, low--rising, multi-story, recreational, military, public health, educational, transportation.

2. Naval and Marine Engineering:

Ships and submarines auxiliary services, water purification, ventilation, air-conditioning, refrigeration, galley, laundry, pumps, fans, gas turbine air intake and exhaust system, air filtration, nuclear, biological, chemical damage (NBCD) control systems, fire fighting, remote temperature and humidity monitoring systems. Design and implementation of Total Air Control Systems on naval ships in compliance with Defense Standards of Royal Navy.

3. Power and Refrigeration Machines and Components:

Automobile and land air-conditioning equipment, compressors, condensers, evaporators, refrigerant piping, temperature and humidity sensors and controls, environmental friendly alternative refrigerants and oils.

4. Global Warming and Ozone Depletion protection measures:

Implementation of Green Building design, indoor air quality (IAQ) and Energy Efficiency codes and standards formulated by American Society of Heating Refrigerating Air-conditioning Engineers (ASHRAE), the US Department of Energy (DoE), Air-conditioning and Refrigeration Institute (ARI) and other national and international professional organizations.

5. Automotive Air Conditioning & Automotive Climate Control System Vehicle Thermal Management System, alternative refrigerants, HFC (Hydro fluorocarbon) & CO2 (Carbon dioxide) refrigeration system, US Clean Air Act (CAA) requirements.

ACADEMIC RESEARCH PROJECTS SUPERVISION, GUIDANCE & EXAMINATION

Marine Engineering System Management Projects of Marine Engineering Officers (1996-2008):

M.S. Degree Thesis Projects (1996-2008):

PhD Degree Dissertation (2008):

PATENTED ITEMS OF INTERNATIONAL RESEARCH TEAM WORK (U.S.S.R 1981- 1988)

b	<p>SU 1122868 dated 1984-11-07 International classification: F25B39/04; F25D11/02; (IPC1-7): F25B39/04; F25D11/02</p> <p>European Classification: SU19833625571 19830718</p>	<p>Condenser for Freon Refrigerating Machines Operating on Mixture of Working Substances</p> <p>Inventor: Nikulshin Ruslan K; Petriman Efim F; Fedorenko Boris V; Kurakin Arkadij K</p> <p>Applicant: Nikulshin Ruslan K; Petriman Efim F; Fedorenko Boris V; Kurakin Arkadij K</p>
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INDUSTRIAL USE OF INTERNATIONAL RESEARCH TEAM WORK (U.S.S.R 1981- 1988)

1. Design and manufacture of prefabricated all-aluminum cold storage for frozen and refrigerated food for use in remote agricultural locations. (In collaboration with USSR Research Institute of Light Alloy Metals, Moscow, Russia = “*Nauchno-Isledovatel'ski Institut Lyokhkhikh Isplavov*”).
2. Design and manufacture of cascade deep refrigeration machine for storage and testing of special materials and bio-material for artificial insemination. (In collaboration with Odessa Laboratory Equipment Manufacturing Plant, Odessa, Ukraine = “*Odesski Zavod Laboratornovo Oborudovaniya*”).

PUBLICATIONS

LIST OF PUBLICATIONS AND PRESENTATIONS (1983- 2006)

1. **Abdul Shakoor Khan. 1983.** “Cascade Refrigerating Machine for Low Temperature Storage and Testing of Materials and Bio-Products”. *MS Thesis*. Odessa Technology Institutes of Refrigeration Industry (*OTIKhP = Odesski Tekhnologicheskii Institut Kholodilnoy Promyshlennosti*, now renamed “*Odessa State Academy of Refrigeration (OSAR)*”), Odessa, Ukraine (USSR).
2. **Abdul Shakoor Khan. 1984.** “Research Methods in Study of Aerodynamic Characteristics of Refrigeration Equipment”. *Int'l. Conf. Achievements in Modern Refrigeration*. Odessa Technology Institutes of Refrigeration Industry (*OTIKhP = Odesski Tekhnologicheskii Institut Kholodilnoy Promyshlennosti*, now renamed “*Odessa State Academy of Refrigeration (OSAR)*”), Odessa, Ukraine (USSR).

<p>Nikulshin R K; Petriman E F;...; Abdul Shakoor Khan. 1985. “Heat Transfer and Flow Resistance in Converging- Diverging Channels of Plate- Type Condensers”. <i>Kholdilnaya Tekhnika I Tekhnologia</i>, No. 40, pp. 3-6, 1985. <i>Journal of Ukraine Academy of Sciences</i>. Tekhnika, Kiev, Ukraine (USSR).</p>
<p>3. Petriman E F; Nikulshin R K; Abdul Shakoor Khan.1986. “Compact and Effective Roll-Welded Aluminum Plate-Type Refrigerant Condensers” <i>Ann. Conf. Progr. Sci. Tech.</i> 1986. Institute of Food Processing Technology, St. Petersburg, Russia, (USSR).</p>
<p>4. Abdul Shakoor Khan; Nikulshin R K; Petriman E F. 1989. “Heat and Mass Transfer in Forced Flow of Moist Air in Profiled Channels of Parallel- Plate –Type Air Cooler Under Frosting Conditions”. <i>Kholdilnaya Tekhnika I Tekhnologia</i>, No. 48, pp. 57-61, 1989. <i>Journal of Ukraine Academy of Sciences</i>. Tekhnika, Kiev, Ukraine (USSR).</p>
<p>5. Petriman E F; Nikulshin R K; Abdul Shakoor Khan 1987. “Build A Quick Assembled Light-Weight Cold Storage in Five Hours”. <i>Ann. Conf. Progr. Sci. Tech.</i> 1987. Ministry of Food and Agriculture, Kishinev, Moldavia (USSR).</p>
<p>6. Abdul Shakoor Khan; Nikulshin R K; Petriman E F. 1988. “Roll-Welded-Aluminum Plat-Type Heat Exchangers Make a Portable Refrigeration System Light, Effective and Economical”. <i>Ann. Conf. Progr. Sci. Tech.</i> 1988. Odessa Institutes of Refrigeration and Power Engineering, Odessa, Ukraine (USSR).</p>
<p>7. Abdul Shakoor Khan. 1988.”Heat and Mass Transfer in Forced Flow of Moist Air Profiled Channels under Frosting Conditions”. <i>PhD Thesis</i>. Odessa Institutes of Refrigeration and Power Engineering, Odessa, Ukraine (USSR).</p>
<p>8. Abdul Shakoor Khan. 1996. “A Short Course in Refrigeration System and Equipment Design”. <i>Tutorial, Textbook</i>. Pakistan Navy Engineering College (PNEC), PNS JAUHAR, National University of Sciences and Technology (NUST), Karachi, Pakistan.</p>
<p>9. Abdul Shakoor Khan. 2001. “Tapping Resources of CAR (Central Asian Republics)For R & D and Indigenization of Defense Industry of Pakistan”. <i>Technocrat Millenium Edition 2001</i>. Pakistan Navy Engineering College (PNEC), PNS JAUHAR, National University of Sciences and Technology (NUST), Karachi, Pakistan.</p>
<p>11. Abdul Shakoor Khan. 2003. “ Heat Exchangers of Commercial Refrigeration Equipment for Super Markets”. <i>10thExpo and Conference 27-29 March 2003, Serena Hotel, Islamabad</i>. Pakistan Heating Ventilation Air Conditioning Refrigeration (HVACR)</p>

Society, Islamabad, Pakistan.

12. Abdul Shakoor Khan 2004. "Heat Mass Transfer in Aluminum Roll Bonded Air-Coolers (RBAC) Under Frosting Conditions". *Technocrat Journal of Sciences and Technology*, ISSN 1728-569 , pp. 16-21, Vol.1, Jun 2004. Pakistan Navy Engineering College (PNEC), National University of Sciences, and Technology (NUST), Karachi, Pakistan.

13. Abdul Shakoor Khan 2006. "Business Success of Merchants of Death" (a review of progress in military technology), *Muhandis-al-Bahria 2005-06*. . pp. 84-88, Pakistan Navy Engineering College (PNEC), PNS Jauhar, National University of Sciences and Technology (NUST), Karachi, Pakistan.

TECHNICAL CONFERENCES/ SEMINARS ATTENDED (1996-2005)

1. **1996.** "1st International Conference on Vibration, Hotel Holiday Inn, Islamabad". KRL Islamabad, Pakistan. Chaired a session.

2. **2000.** "Seminar on Renewable Resources of Energy, Hotel PC Karachi 2000", Karachi, Pakistan.

3. **2002.** "1st National Conference on Desalination of water, Hotel Marriot, Karachi, 2002". Pakistan Desalination Association (PakDA), Karachi, Pakistan.

4. **2003.** "10th International HVACR Conference, 27-29 March 2003 Hotel Serena Islamabad". Pakistan HVACR Society, Islamabad Chapter, Islamabad, Pakistan.

5. **2003.** Institute of Engineers Pakistan Karachi. Multi-discipline Conference at Karachi Center.

6. **2003.** Monthly Seminars of "ASHRAE JOURNAL CLUB". Pakistan HVACR Society Karachi Chapter.

7. **2004.** 11th Pakistan HVACR Expo plus Conference at Expo Centre Karachi.

8. **2005.** Technical Seminar on June 04, 2005 in the NED UET on Inauguration of the Library of Karachi Chapter, Pakistan HVACR Society.

EDITORSHIP OF JOURNAL

I am the founding chief editor of *Technocrat Journal of Sciences and Technology*, ISSN 1728-569. "Technocrat" was registered with ISSN as a NUST (Karachi campus, PNEC) journal for dissemination of research results to research community, academia and industry. Its periodicity is biennial. Three volumes are (2004, 2006, 2008) already published during last six years. It is the first research journal of NUST in engineering discipline.

MEMBERSHIP OF PROFESSIONAL ORGANISATIONS

- Life Member **Institute of Engineers Pakistan (IEPk)** (M/9458-K/244 dated 27-6-1989).
- Life Member **Pakistan Engineering Council (PEC)** (P.E. Mech.2952 dated 12 Sep 1981)
- Life Member **Pakistan Heating Ventilation Air Conditioning Refrigeration (HVACR) Society** Karachi Chapter (021-2-0505 dated March 2004)
- Member **International Desalination Association (IDA)** (April 2002)
- Member **American Society of Heating Refrigerating Air-Conditioning Engineers (ASHRAE), USA** (5015919 dated Dec, 1989).
- Corr. Member **International Institute of Refrigeration (IIR), Paris**, (Corr.4793 dated Sep.1989).
- Member **National Fire Protection Association (NFPA), USA** (A 30307620000 dated Apr. 1992).
- Member **Society of Petroleum Engineers (SPE), USA** (153648 dated Sep. 1992).

HONORS AND AWARDS

- **GOLD MEDAL FOR OUTSTANDING STUDENT 1969**, Board of Intermediate and Secondary Education (BISE) Karachi, Pakistan.
- **PRESIDENT'S GOLD MEDAL FOR OUTSTANDING STUDENT, 1970**, President of Pakistan. (All Pakistan Basis including East Pakistan, now "Bangla Desh")
- **COMKAR COMMAND BEST TEACHER AWARD 2001**, Commander Karachi, Pakistan Navy

EMPLOYMENT HISTORY

A1. 26 Nov 2008 - Current

**NED UET Karachi Pakistan,
Professor BPS-21 on Contract
Department of Automotive & Marine Engineering**

Teaching:

BE (Mechanical, Automotive, Textile)

Utility Services, Heating, Ventilating, Air Conditioning of Textile Plants; Vehicle (automobile) Thermal Management Systems; Refrigeration & Air Conditioning of buildings.

ME (Mech.)

Advanced Refrigeration and Air Conditioning

Research

Testing of New Lubricating Oil for IC-Engine Performance

Supervision/guidance/ Examination of ME & BE level design and make projects.

Department of Automotive Engineering, NED UET, University Road, Karachi-75270, Pakistan

<http://www.neduet.edu.pk>

Abbreviations: NED = Nadir Shaw Edulji Dinshaw (an Indian philanthropist of Parsi

community of Karachi during early 20th century).

UET= University of Engineering & Technology.

A. 3 March 1996 -14 Aug. 2008

**PNEC PNS JAUHAR NUST
College of Marine Engineering
Pakistan Navy
Karachi, Pakistan**

**Associate Professor
Commander Pakistan Navy
(Retiring on 13th August 2009)**

Teaching:

BE (Mech.)

Gas Dynamics; Computer-Aided Thermal System Design; Computer-Aided Mechanical Engineering Design; Refrigeration and Air-conditioning; Gas Turbines; Thermodynamics

MS (Mech.)

Convective Heat Transfer; Conductive Heat Transfer; Mass Transfer; Thermal System Design; Fluid Mechanics

Editorship of Journal

Founding Chief Editor of “**Technocrat**”, **ISSN 1728-569**, published biennially by Pakistan Navy Engineering College (PNEC) Karachi, since 2004.

Lab Tutorials (BE)

Heat Transfer; Internal Combustion Engines;
Gas Turbines; Turbo-Machines; Nozzle Flow Apparatus; Heat Exchangers; Boiler Trainer.

Curriculum Design

Review and Design of new courses and curriculum for B.E. and M.S. programs for PEC, HEC, NUST accreditation.

(Abbreviations: PEC = Pakistan Engineering Council; HEC = Higher Education Commission of Pakistan)

ISO 9001:2000 Certification:

PNEC PNS JAUHAR NUST Karachi is the First Academic Institution of Pakistan getting ISO-certification of quality education. It was a novel experience to design process and SOPs to fulfill international standards.

Supervisory

Group Officer Mechanical Labs,
Course Officer IX GL (ME) + X GL (ME),
OIC Thermodynamics Lab,

OIC Boiler Shop,
OIC Automobile Club
Coordinator MS Mech. Courses,
Coordinator Short Courses,
Coordinator Seminars for expatriate and foreign professionals and scientists under TOKTEN program.

(Abbreviations: TOKTEN =Transfer of Knowledge Through Expatriate Nationals of Pakistan; OIC = Officer In-charge; GL = General Line mode of entry into Pakistan Navy; ME = Mechanical Engineering)

Research

Guidance and Supervision of Design and Make Projects (B.E.) ,
Guidance and Supervision of MS Theses, Feasibility and Proposals of Research Projects for MoST, NUST and Foreign Universities in Solar Energy Air-conditioning and Heat Exchangers.

(Abbreviations: MoST = Ministry of Sciences & Technology, Government of Pakistan; NUST = National University of Sciences & Technology, Pakistan)

Consulting

Project supervision, specification, tender documentation, renovation, design of building services: HVAC & R, Plumbing, Public Health (Water Supply and Sewerage) and Power Supply services of on-shore establishments of Pakistan Navy.

(Abbreviations: HVAC & R = Heating Ventilation, Air Conditioning and Refrigeration)

Foreign Languages

Translation /interpretation

From **Russian to English and vice versa** for scientific research and communication with foreign VVIP dignitaries (particularly senior defense personnel from Ukraine, Russia, Azerbaijan and Central Asian Republics of CIS).

(Abbreviations: Commonwealth of Independent States, breakaway republics of erstwhile country the USSR),

(Abbreviations: PNEC = Pakistan Navy Engineering College; PNS = Pakistan Navy Ship); NUST = National University of Sciences & Technology). NUST is the largest public sector university of sciences and technology established in 1991. The university was granted charter in 1993 for engineering, information technology, medical, management sciences and basic sciences. PNEC is the Karachi Sindh campus of the NUST since 1995.

URL of NUST: <http://www.nust.edu.pk>

URL of PNEC:

<http://www.pnec.edu.pk>

B. July 1995 - Dec. 1995

NED UET, Karachi, Pakistan

Visiting Faculty.

Teaching Gas Dynamics

C. November 1988 - June 1995

Various

**Architectural Engineering and Contracting
Firms in the Middle East, France and Pakistan**

**Free Lance Consultant
Senior Mechanical Engineer**

Mechanical Services:

Heating, Ventilating, Air-conditioning, Refrigeration, Water Supply, Water Treatment, Sewerage, Drainage, Sewerage Treatment, Irrigation, Fire Fighting, Decorative Fountains, Security, Building Management. Design, Specification, Tender Documentation, Construction Supervision, Testing, Commissioning, Adjusting, Operation and Maintenance of Building Services of commercial, industrial and military application.

Sensair Services, Dubai (UAE); Al-Asr Consultants, Al-Ain, UAE; Department of Education, Government of UAE; Knight Engineering Consultants, Dubai UAE; Al-Mana Design Consultants International, Doha (Qatar), SODETEG (a subsidiary of THOMSON group Paris (France); Al-Mahmal Trading Jeddah (KSA); FND Consultants, Karachi Pakistan); Engineering Associates, Karachi, (Pakistan)

(Abbreviations: UAE = United Arab Emirates);
KSA = Kingdom of Saudi Arabia; FND = Fahim Nanji De Suza

D. Aug.1981- Aug.1988

**Odessa Institute of Refrigeration Industry,
Odessa, Ukraine, USSR**

Research Fellow

Research and teaching in the faculty of Refrigerating Engineering.
Defense of MS- and PhD-Theses.

Odessa Institute of Refrigeration Industry (OTIKhP), Odessa, Ukraine, (erstwhile) USSR. Institute renamed as "Odessa State Academy of Refrigeration" and abbreviated as "OSAR".

URL. <http://www.osar.odessa.ua>

E. July 1977 - Aug.1981

**Pakistan Steel Mills Corporation
Bin Qasim (Pipri), Karachi, Pakistan
Turn-key project of "Tyazh-Prom-Export",**

Moscow, USSR (Russia).

Assistant Executive Engineer (A'XEN)

Shop In-charge (Foundry Block)
Shop In-charge (Forging Block),
Shop In-charge (Fabrication and Welding Block).

Supervision

Of installation, erection, fabrication, testing,
commissioning of process equipment and process
Structure of heavy foundry and forging equipment.

F. Dec.1977- Sep.1978

On –job training sponsored by

**Pakistan Steel Karachi and
Tyazh-Prom-Export, Moscow, USSR (Russia)**

In 5-million-ton-capacity steel mills “ZAPOROZHSTAL”
in Zaporozhiye, Ukraine, USSR.

Production Planning

Of Forging and Fabrication shop.

Process Design and Fabrication

Of spares/ consumables for process equipment of Pakistan Steel.

Operation and Maintenance

Of pneumatic forging hammers, shear presses, rolled section shears, plate bending
machines, pipe bending machines, heating and heat treatment furnaces, welding and gas
cutting machines.

G. June1975- June1977

**Hashtnagar Steel Fabrication Industry
Bin Qasim, Pakistan Steel Karachi,
Pakistan**

Supervisor

Steel Structure Fabrication Shop

Fabrication, inspection and approval of process-steel-structures and their components.
Coordination with Pakistan Steel management for procurement of materials and assemblies.