

# Dr. Khalid Masood

Assistant Professor  
Hafr Al-Batin Community College  
King Fahd University of Petroleum and Minerals  
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## Personal Information

Name	Khalid Masood
Date of Birth	Jan. 21, 1963
Nationality	Pakistani
Marrital Status	Married

## Degrees

YEAR	DEGREE	SUBJECT	UNIVERSITY
2002	Ph.D.	Applied Math.	KFUPM, Dhahran, Saudi Arabia
1993	M.A.	Mathematics	SUNY at Buffalo, USA
1990	M.Phil.	Applied Math.	Quaid-i-Azam University, Pakistan
1987	M.Sc.	Applied Math.	Government College Lahore, Pakistan

**M. Phil. Thesis:** Temperature Effects on Drift Waves in Sheet Plasmas, Quaid-i-Azam University, Islamabad, Pakistan, 1989.

**Ph. D. Dissertation:** Some Exact and Approximate Inverse Boundary and Scattering Problems, King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia, 2002.

## Areas of Interests

- Applied Mathematics, Direct and Inverse Boundary Value Problems

## Career History

YEAR	POSITION	INSTITUTION
Sep. 2002-	Assistant Professor	HBCC-KFUPM
1997-2002	Lecturer-B	KFUPM
1993-1996	Senior Teacher	Secondary schools, UAE

## Computer Skills

**Languages:** Fortran, C++

**Software Packages:** Mathematica, Maple, Matlab, Visio, Scientific Work Place, MS Word, Excel.

**Note:** I used Mathematica and Maple in problem and Lab sessions. I used Matlab in my research work.

## Teaching

An important contribution of mine is to develop a new course (Math000) and its syllabus and material for preparation year students. I developed a text tailor made for students at HBCC which targets the common weaknesses of the new students. In the beginning, it was introduced as a semester long course with two contact hours per week together with English000 and later it was merged with Math001. I have taught a variety of courses at

undergraduate level at KFUPM and Hafr Al-Batin Community College which are listed below:

Math 000; Math 001 Preparatory Mathematics I; Math 002 Preparatory Mathematics II

Math 101 Calculus I; Math 102 Calculus II

Math 161 Applied Calculus; Math 162 Calculus for Business; Math 171 Finite Mathematics

**Note:** Many of these courses have been taught more than once.

## **Administrative Work**

**GSSU COORDINATOR (031-052 Semesters):** Mathematics, Physics, Physical Education and Islamic Studied come under General Science and Studies Unit. Responsibilities of a Coordinator include:

- Smooth running of the Unit. Regular meetings with the faculty members for discussions on current issues related to teaching. Course offerings and course assignments. Ordering books, apparatus for the Lab and equipments needed for instructions. Evaluation of new applicants. Formation of Department committees for recommendation of new textbooks and other related matters. Regular meetings with the Dean of the College. Listening the complains and problems of the students and helping them solve their problems. Interacting with other Units.

**LRU COORDINATOR (031-052 Semesters):** The Library, Photocopy center and teaching aid equipments come under Learning Resource Unit. A new Library information system “New Horizon” was successfully implemented for HBCC Library under my supervision. Responsibilities of the Coordinator include:

- Smooth working of the Library. Ordering of new books in consultation with all academic Units. Smooth running of the photocopy facilities. Order and maintain overhead projectors. Maintaining audio visual equipments.

## **Committee Work at HBCC-KFUPM**

During my stay at HBCC-KFUPM, I have been actively involved in Standing Committees, College Council and Department Committees. I participated in the College Council meetings

as GSSU coordinator and took an active part in formulating policies, development of the BS program, revision of the existing programs and actively involved in the discussions to improve the academic environment of the college. I was a regular member of Academic Affairs Committee and the Information Resources Committee. Following is an account of my involvement in different committees.

## **Standing Committees**

- Member Academic Affairs Committee, 2004-05, 2005-06.
- Vice Chairman Information Resources Committee, 2004-2005.
- Member Information resource Committee, 2005-2006.

## **Other Department Committees**

- Textbook Committee
- Entrance Exam Committee (Participated in the development of multiple choice Exam for newly admitted students)
- Evaluation Committee

## **Participation in Conferences and Workshops**

1. First Saudi Science Conference held at King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia, 9-11 April 2001.
2. Workshop on Medical Physics, Its Importance and Its Future in the Kingdom, held at KFUPM, Dhahran, Saudi Arabia, March 16, 2002.
3. Workshop on Striving for Excellence in University Teaching and Learning-III, held at KFUPM, Dhahran, Saudi Arabia, April 07-16, 2002.
4. Workshop on How to be an Effective University Teacher, held at Hafr Al-Batin Community College, Hafr Al-Batin, Saudi Arabia, September 14-16, 2002.
5. 6th International Congress on Industrial and Applied Mathematics, ICIAM07, Zurich, Switzerland, July 16-20, 2007.
6. Summer Conference in Mathematics-2007, Center for Advanced Studies in Mathematics, LUMS, Lahore, Pakistan, July 30-31, 2007.
7. 1st Mathematics Conference at CASPAM, BZU, Multan, Pakistan, July 27-28, 2007.

## Research

I have been actively involved in research during the last four years. Much of my research work is conducted during my stay at Hafr Al-Batin Community College. While academic research is not required at HBCC, I actively pursued research in the areas of my interest during the last four years which is my duration of stay at HBCC. This was in spite of the limited resources at the community college for the level of research I conduct. The research work I produced is a result of extreme hard work, keeping in mind, every semester a full teaching load/administrative work (equivalent to 12-14 contact hours) is assigned to me.

## Publications

### Technical Reports

1. **Khalid Masood**, S. Messaoudi and F.D. Zaman, Initial inverse problem in heat equation with Bessel operator. KFUPM Report No. 271, 2002.
2. F. D. Zaman and **Khalid Masood**, An inversion procedure for the recovery of propagation speed and damping of the medium. KFUPM Report No. 272, 2002.
3. **Khalid Masood** and F. D. Zaman, Initial Inverse Problem in a Two - Layer Heat Conduction Model. KFUPM Report No. 301, 2003.
4. F. D. Zaman and **Khalid Masood**, Shear Velocity Inversion Procedure For Love Waves. KFUPM Report No. 300, 2003.
5. **Khalid Masood**, S. Messaoudi and F. D. Zaman, Recovery and Regularization of the Initial Temperature Distribution in a Cylinder. KFUPM Report No. 302, 2003.
6. **Khalid Masood** and F. D. Zaman, Investigation of the Initial Inverse Problem in the Heat Equation. KFUPM Report No. 303, 2003.
7. **Khalid Masood** and M. T. Mustafa, Investigation of an Initial Inverse Problem by using Hyperbolic Heat Equation with Bessel Operator and a Total Variation Method. KFUPM Report No. 360, 2006.
8. **Khalid Masood** and M. T. Mustafa, Regularization of an Initial Inverse Problem by using Smoothing Splines and Hyperbolic Heat Equation with Bessel Operator. KFUPM Report No. 361, 2006.

## Project Reports

1. F. D. Zaman and **Khalid Masood**, An Inversion Procedure for the Recovery of Propagation Speed and Damping of the Medium in Three-dimensions, KFUPM Project Report, Project FT-2004/11 Sep. 2004 to Aug. 2005.
2. **Khalid Masood** and M. T. Mustafa, Investigation and Regularization of Initial Inverse Heat Conduction Problem in Two Dimensions by Total Variation and Spline Methods, KFUPM Project Report, Project SB070008 May 01, 2007 to March 31, 2008.

## Papers in Refereed Proceedings

F. D. Zaman and **Khalid Masood**, An Inverse Problem in Hyperbolic Heat Equation, Proceedings of the First Saudi Science Conference Dhahran Saudi Arabia Vol. 3 , 377-386, 2001.

## Original Papers in Refereed Professional Journals

1. F. D. Zaman and **Khalid Masood**, An inversion procedure for the recovery of propagation speed and damping of the medium, *IL Nuovo Cemento 'C'*, 25(3): 263-271, 2002.
2. **Khalid Masood** and F. D. Zaman, An initial inverse Problem of heat conduction in a plate with a hyperbolic model, *Intern Math. Journal*, 2(3), 237-251, 2002.
3. **Khalid Masood**, S. Messaoudi and F.D. Zaman, Initial inverse problem in heat equation with Bessel operator, *Int. Journal of Heat and Mass Transfer*, 45(14): 2959-2965, 2002.
4. F. D. Zaman and **Khalid Masood**, Shear velocity inversion procedure for Love waves, *Journal of Technical Physics*, 44, 3, 295-301, 2003.
5. **Khalid Masood**, S. Messaoudi and F. D. Zaman, Recovery and Regularization of the Initial Temperature Distribution in a Cylinder, *Journal of Heat and Technology*, 21, 2, 155-160, 2003.
6. **Khalid Masood** and F.D. Zaman, initial inverse problem in a two-layer heat conduction model, *The Arabian Journal of Science and Engineering*, 29, 1B, 3-12, 2004.
7. **Khalid Masood** and F. D. Zaman, Investigation of the Initial Inverse Problem in the Heat Equation, *Journal of Heat Transfer*, 126, 2, 294-296, 2004.

8. F. D. Zaman and **Khalid Masood**, Direct and inverse acoustic scattering problem over a two-part impedance ground in a moving fluid by using Weiner-Hopf technique, *Journal of Technical Physics*, 46, 1, 1-13, 2005.
9. F. D. Zaman, **Khalid Masood** and Z. Muhiameed, Recovery of Variation in Density and Bulk Modulus in the Presence of Damping, *FJSM*, 17(1), 93-105, 2005.
10. F. D. Zaman and **Khalid Masood**, Investigation of the direct and inverse solutions for torsional waves propagating in a cylinder, *Applied Mathematics and Computation*, 173, 1238-1245, 2005.
11. **Khalid Masood**, Recovery and Regularization of the Initial Temperature Distribution in a Plate, *Journal of Heat and Technology*, 23(2), 37-42, 2005.
12. F. D. Zaman, **Khalid Masood** and Z. Muhiameed, Inverse Scattering in Multilayer Inverse Problem in the Presence of Damping, *Applied Mathematics and Computation*, 176(2), 455-461, 2006.
13. **Khalid Masood**, Recovery and Regularization of the Initial Temperature Distribution in a Two-Layer Cylinder with Perfect Thermal Contact at the Interface, *PJA Ser. B*, 82(7), 224-231, 2006.
14. **Khalid Masood** and F. D. Zaman, Recovery of Medium Properties in Three-dimensions with Three-dimensional Parameters Variability, *Journal of Technical Physics*, 48, 1, 3-12, 2007.
15. F. D. Zaman, **Khalid Masood** and Z. Muhiameed, Testing of the Inverse Problem with Constant-Background in the Presence of Damping in a Single Layer, *Bollettino di Geofisica Teorica ed Applicata*, (accepted).
16. **Khalid Masood** and M. T. Mustafa, Stabilizing of an Ill-Posed Inverse Problem by using Smoothing Splines and Hyperbolic Heat Equation, *Inverse Problems in Science and Engineering*, (accepted).