

CURRICULUM VITAE

1. **NAME** : Francis John Gichaga
2. **ADDRESS** : University of Nairobi, P.O. Box 30197,
00100, Nairobi
E-mail fgichaga@uonbi.ac.ke
: Mobile 0722512487
- \
3. **DATE OF BIRTH** : 8th December 1942
4. **NATIONALITY** : Kenyan
5. **MARITAL STATUS** : Married
6. **EDUCATIONAL/PROFESSIONAL QUALIFICATIONS**
 - 1949 – 1958 : **Kiangoma and Ngaini** Primary Schools, **Tumu Tumu** Intermediate School.
 - 1959 – 1962 : **Kagumo** High School: obtained Cambridge School Certificate.
 - 1963 – 1964 : **Kangaru** High School: obtained Cambridge Higher School Certificate.
 - 1965 – 1968 : **University College Nairobi** (University of East Africa): obtained **BSc (Eng)**, First Class Honours in Civil Engineering.
 - 1968 – 1971 : **University of Nairobi**: obtained **MSc** in Civil Engineering.
 - 1976 – 1980 : **University of Nairobi**: obtained **PhD** in Highway Engineering.
 - 2010 : **Jomo Kenyatta University of Agriculture and Technology**: conferred with honorary **DSc** in Human Resource Management.
 - 1972 : Member, Institution of Engineers of Kenya (MIEK).
Currently **Fellow Institution of Engineers of Kenya (FIEK)**. Registered Engineer (**R.Eng.**)
: Member, Institution of Civil Engineers, (MICE),
Chartered Engineer, (**C. Eng.**), U.K. Currently
Fellow, Institution of Civil Engineers, (FICE).

7. POSTGRADUATE COURSES/RESEARCH FELLOWSHIPS

- 1972 : Three months postgraduate course in Urban Development Planning at the Development Planning Unit, School of Environmental Studies. **University College London.**
- : I covered courses in Urban Development Planning
- 1976/77 : One month research tour to **University of Dar-es-Salaam.**
- : I studied the Finite Element Technique as applied to structural analysis.
- 1977 : Four months Senior Inter-University Council Research Fellowship at the Department of Civil Engineering, **University of Southampton.** Also visited the **University of Nottingham, University of Birmingham,** and the **Transport and Road Research Laboratory (TRRL), U.K.**
- : I applied Finite Element Technique to the analysis of flexible pavement structures.
- 1985 : One month course on Transportation Policy, Investment planning and analysis. **Eastern and Southern African Management Institute.** Arusha, Tanzania.
- : I studied Transport Policy Formulation, Economic evaluation of Transport projects and Transport project planning among other subjects.

8. POSITIONS HELD

- June – October
1968 : **Graduate Engineer,** Nairobi City Council
- October 1968 –
March 1971 : **Graduate Research Assistant,** University of Nairobi.
- April 1971 –
August 1974 : **Assistant Engineer, Principal Assistant Engineer, Ag. Chief Assistant Engineer, Ag. Assistant City Engineer,** Nairobi City Council.

1973, 1974 : Part-time **Lecturer**, University of Nairobi.

August 1974-
February 1979: **Senior Lecturer**, University of Nairobi

July 1977- : **Chairman**, Department of Civil Engineering
Nov. 1985 University of Nairobi.

February 1979-: **Associate Professor**, Department of Civil
November 1986 Engineering, University of Nairobi.

November 1986-: **Professor** of Civil Engineering.
to-date

August 1982 -: **Dean**, Faculty of Engineering, University of Nairobi.
November 1985

November 1985: **Ag. Principal**, College of Architecture and
May 1986 Engineering, University of Nairobi.

May 1986 - : **Principal**, College of Architecture and Engineering,
February 1991 University of Nairobi.

March 1991 -: **Deputy Vice-Chancellor** (Academic Affairs)
Dec. 1991

December 1991-: **Vice-Chancellor**, University of Nairobi
March 2002

January 2010 **Chancellor**, Jomo Kenyatta University of Agriculture
to-date and Technology.

9. AREAS OF SPECIALIZATION AND RESEARCH INTERESTS

- Pavement Evaluation and Rehabilitation.
- Soil Mechanics and Foundation Engineering
- Highway and Traffic Engineering
- Transportation Engineering
- Manpower Training and Development in Engineering
- University Management.

10. INDUSTRIAL EXPERIENCE

<u>Period</u>	<u>Employer</u>	<u>Nature of Work</u>
June 1968 to October, 1968	Nairobi City Council as Graduate Engineer.	Carried out design of Road, Sewers and Structural Design.

April 1971 to
August 1974

Nairobi City Council
as Assistant Engineer,
Principal Assistant
Engineer, Acting Chief
Assistant Engineer,
Acting Assistant City
Engineer.

Was involved in
Transportation planning,
design of services to
housing estates and
supervising those carrying
out similar activities.
Was in charge of the
Operations and
Maintenance section
which was involved in
construction,
maintenance and
operations of engineering
works of the City Council.
The following sections
were under my control as
Acting Assistant City
Engineer: Building Works,
Highways, Contracts,
Transport, Parks, Fire
and Ambulance with
labour force of about
2,500.

11. TEACHING EXPERIENCE:

<u>Period</u>	<u>Employer</u>	<u>Nature of Work</u>
October 1968 to March 1971	University of Nairobi as Graduate Research Assistant (M.Sc. Programme).	Took part as a demonstrator in Engineering Drawing (First Year) and Highways Laboratory (Second and Third Years) Classes
February 1973 to August 1974	Nairobi City council and employed on part- time basis as a Lecturer by University of Nairobi	Gave lectures to Final Year Civil Engineering students in Highway Engineering and to Postgraduate Diploma Students (in Planning) in Transportation Planning.
August 1974 to Feb. 1979	University of Nairobi as Senior Lecturer	Taught the following courses: - F101 - Soil Mechanics F104 - Civil Eng. Drawing F133 - Eng. Design F202 - Soils & Highways.

		F304 - Eng. Project
		F308 – Highway & Traffic Engineering, Water Resources Admin. to Postgraduate students.
February 1979 to Nov. 1986	University of Nairobi as Associate Professor	Taught the above mentioned courses.
November, 1986 to-date	University of Nairobi as Professor	- do -
		FCE446: Transportation Engineering11 FCE592:Professional Practice and Ethics Taught following M.Sc. Courses: CE461:Urban Transportation CE462:Pavement Design1 CE463:PavementDesign11 Supervising Ph.D. and MSc projects

12. RESEARCH EXPERIENCE

<u>Period</u>	<u>Employer</u>	<u>Nature of Work</u>
October 1968 to March 1971	University of Nairobi as Graduate Research Assistant	Carried out Research on Elastic response of flexible pavements in Kenya. Research involved extensive laboratory tests, field studies and theoretical work. Thesis written led to award of M.Sc.
April to Dec. 1971	Nairobi City Council as Assistant Engineer	Carried out Research on Transportation problems (mainly public Transport in Nairobi City). The research was a joint exercise between Nairobi

City Council, UNDP, ODA and Colin Buchanan and Partners (Consultants).

I was involved in Organizing data collection, analysis and making recommendations on the improvement of Public Transport. Technical Reports written formed part of the Nairobi Metropolitan Growth Strategy (1973) of the Nairobi Urban Study Group.

January 1972 to March 1972

Nairobi City Council
as Assistant Engineer

Carried out research on Highway Maintenance in the City of Nairobi. Recommendations were presented in form of a paper to the City Engineer

December 1975 to-date

University of Nairobi
as Senior Lecturer,
Associate Professor
and Professor

Has been carrying out research on structural behaviour of flexible road pavements in Kenya. This is a long term research relating to the earlier work started in 1968. The research findings were presented in form of Ph.D. thesis in 1979. This research programme has also been the basis for Ph.D. projects for the following:

Graham A. Hall – awarded
Gideon K. Misoi – awarded
Sixtus K. Mwea – awarded

The following have also pursued M.Sc. projects in the same research programme:

P.A. Murunga - awarded

F.S. Atibu - awarded
M. Wa-Kyendo - awarded
J. Kaliti - awarded

This Research provided base data for many publications presented in Journals and in various conferences in Africa and internationally (Europe, Asia, Scandinavia, America).

August 1982
to 1986

University of Nairobi
as Associate Professor

Carried out research jointly with Dr. Visweswaraiya (Senior Lecturer) on strength characteristics of Nairobi Soils. Research was financed by the National Council for Science and Technology. Research findings were submitted to the National Council for Science and Technology in form of a report "Geotechnical properties of Nairobi Soils". Research data has provided base data used in preparation of publications presented in conferences.

1986 to-date

University of Nairobi
as Professor

Supervising PhD and MSc candidates

13. MAJOR CONSULTANCY PROJECTS

Period

Employer

Nature of Work

October 1976
to September
1981

Ministry of Education

Advised on course structure and Physical Development for the Mombasa Polytechnic. Advised on layout and equipment requirements for various laboratories and workshops. This was

February 1978 to May 1978	Ministry of Water Development	a GTZ aided project. Carried out Management Study. Recommended on Organization structure and on technical features necessary to streamline the operations of the Ministry. This was a World Bank aided project.
September 1979	Ministry of Education	Carried out evaluation of the Kenya Technical Teachers College. The evaluation was financed by CIDA of Canada.
November 1981 to March 1982	Ministry of Education	Advising on layout and Equipment requirements for various laboratories and workshops in the proposed National Water Institute at Kajiado. The Project was aided by World Bank (IDA/IBRD).
October/ November 1982	UNESCO	Fact finding tour of Eastern African Associations of Engineering
August 1983	UNESCO/ANSTI/GTZ	Fact finding mission on ANSTI supported Universities in Africa. Toured Universities of Zambia, Lagos in Nigeria, Dakar in Senegal and Fourah Bay College of the University of Sierra Leone.
1978 to-date	Industrial Research and Consultancy Unit of the University of Nairobi and several consulting engineering firms.	Advising on design of engineering works, involving Laboratory testing and analysis.
Nov 2004 to Jan2005	Commission for Higher Education	Study of University-Industry Linkages.

14. OTHER RESPONSIBILITIES

- **Chairman**, Institution of Engineers of Kenya (IEK) from 1985 to 1988
- **Member**, Engineers Registration Board from 1989 to 2003.
- **Member** of UNESCO Consultative Committee on Renewal of Teaching of Science and Technology in Africa (1984 – 1988). Vice-Chairman (1984 – 86).
- **Honorary Secretary** of the Institution of Engineers of Kenya from 1978 to 1984.
- **Council Member** of the I.E.K. from 1974 to 1990.
- **Chairman** of the Board of Governors, Kenya Technical Teachers College from 1992 to 2011.
- **Member**, Electricity Regulatory Board from 1998 to 2001.
- **Chairman**, Kenya Institute of Public Policy Research and Analysis from 1998 to 2004.
- **Member** of Editorial Board of the Kenya Journal of Sciences. Series A.
- **Assistant Editor-in-Chief**, Kenya National Academy of Sciences.
- **Member** of Board of Governors, Kimathi Institute of Technology.
- **Member** of Board of Governors, Kenya Polytechnic (1984 –1986)
- **Member** of the National Road Safety Council (1975 – 1987).
- **Member** of Agricultural Sciences Specialist Committee, National Council for Science and Technology.
- **Member**, University of Nairobi Council from 1986 to 2002.
- **Fellow**, Kenya National Academy of Sciences.
- **Member**, Presbyterian University of East Africa Council from 2007 to-date.
- **Chairman**, National Council for Science and Technology from 1992 to 2003.
- **Chairman**, Kenya Agricultural Research Institute from 2002 to 2003.
- **Chairman**, Water Services Regulatory Board from 2003 to 2007.
- **Chairman**, Kagumo High School, Board of Governors from 2005 to-date.
- **Chairman**, National Irrigation Board from 2007 to 2010.
- **Chairman**, Kenya Polytechnic University College Council from 2009 to 2011.
- **Chancellor**, Jomo Kenyatta University of Agriculture and Technology from 2010 to-date
- **Member**, Engineers Board of Kenya from 2012 to-date.

15. TECHNICAL REPORTS FROM CONSULTANCY PROJECTS

1. **Mombasa Polytechnic Development Project** – Report on design of laboratories, workshops and equipment requirements. Jointly written with Professor P.M. Githinji and Professor A.V. Otieno. Report to the Ministry of Education, January, 1978. The construction was completed in 1982.

2. **Management Study of the Ministry of Water Development** – Written jointly with Professor Rajni Patel and others including Coopers and Lybrand Associates. Report to the Ministry of Water Development, June, 1978.
3. **The Study of Education – Industry Co-operation in Education and Training of Engineers and Technicians in Kenya**. Report written for the UNESCO International Working Group. November, 1978.
4. **National Water Institute** – Kajiado. Report on layout and Equipment requirements of laboratories, workshops, drawing office and other facilities. Report to the Ministry of Basic Education. December, 1981.
5. **Mikindani Site and Service Scheme**. Mombasa. Report on Study of Soil Profiles in the project site. March 1982.
6. **Nyari Estate Roads**. Nairobi. Report on subgrade soils investigation and pavement design for the 5km-road network. October 1982.
7. **Subgrade soil Investigation**. Kericho. Report on subgrade soils investigation. November 1982.
8. **Premix wearing course for top Road at ILRAD**. Nairobi. Report on investigation of premix wearing course which had broken up. March 1983.
9. **Soils investigation for Food Science and Technology Building** Kabete. Report to FADD Projects Office on soils and foundation requirements for the Food Science and Technology Building. Jointly with Dr. B. K. Sahu.
10. **Magumu-Njabini Road**. Nyandarua. June 1983. Report on sources of road building materials for bitumen road and pavement design.
11. **Murram base Compaction**. Report on Kabete Campus Road State of Compaction. May, 1984.
12. **Eldama Ravine-Kwamosor Road**. Rift Valley. July, 1984. Report on subgrade soil investigation and sources of road building materials and pavement design
13. **Kabete Campus Road**. Report on Laterite Gravel and Field Density tests. March, 1985.

14. **Kabarnet Town Sewerage and Drainage Project.** Preliminary Design Report, Final Design Report and contract documents (1988, 1989). 20 km of sewer lines and 15 km drainage line. Ministry of Water Development. (Project Director and Designer).
15. **Soil Investigations for an Irrigation Project in Western Kenya.** Final Soil Mechanics Report (1988, 1989). Canals, related road works and pumping stations. Ministry of Agriculture (Team leader and researcher).
16. **Aircraft Pavements Investigations and Design of Rehabilitation Works.** Investigations Report, Final Design Report and Contract document (1988 & 1989) Runway, Taxiway, base drains and surface drainage works. Ministry of Transport and Communications (Team Leader and Designer).
17. **Grater Nakuru Water Supply Project – Socio-economic and Environmental Impact Study.** Report for the Ministry of Water Development (1989). (Project Director).
18. **Third Nairobi Water Supply Project – Operational and Billing Training** – (1988, 1989). Training project for the Nairobi City Commission staff financed by the World Bank. (Project Director)
19. **University-Industry Linkage in Kenya.** Volumes 1 and 2. Report submitted to the Commission for Higher Education. Jan 2005
20. **Labour-based Technology.** A Review of the current Practice. Volume 2: Proceedings of the Eleventh Regional Seminar.2005.
21. **University Staff Conduct and Responsibility.** Report submitted to the Public Universities Inspection Board. December 2005.

16. EXTERNAL EXAMINER

- 16.1 At the **University of Dar-es-Salaam, Tanzania** – BSc course in Civil Engineering in 1983, 1984 and 1985.
- 16.2 At the **University of Lagos, Nigeria** – BSc course in Civil Engineering in 1984, 1985.
- 16.3 At the **University of Zambia** – BSc course in Civil Engineering in 1984, 1985, 1986.
- 16.4 At the **Kwame Nkrumah University of Science and Technology, Ghana**- MSc in Transportation Engineering in 2006, 2007, 2008.

17. SUPERVISION OF POSTGRADUATE RESEARCH PROJECTS

17.1 M.Sc.

- (a) P.A. Murunga - "Performance of Flexible Road Pavements in Kenya". Candidate awarded M.Sc. in 1985.
- (b) F. Atibu - "Analysis of Highway Embankment Cracking". Candidate awarded M.Sc. in 1988.
- (c) P.M. Kimori - Road Traffic Accidents and Conflicts.
Candidate awarded M.Sc. in 1988.
- (d) E. Goro - Swelling characteristics of Black Cotton soil. Candidate awarded M.Sc.
- (e) J. Kaliti - Study of Bituminous Materials. Candidate was awarded MSc in 2008.
- (f) M. Wa-Kyendo - Study of Road pavements. Candidate awarded M.Sc.
- (g) C. K. Temu - Pavement design of major highways in Kenya (the case study of Nairobi-Thika Highway Improvement Project). Candidate was awarded MSc in 2012.
- (h) F. K.Kipyator - Design and analysis of the economic value on use of concrete or flexible pavement on sections with steep to rolling terrain .(Case Study: Northern Corridor-A104 Road, Timboroa). Candidate has submitted his thesis for examination.
- (i) P.K. Njenga - Characterization of Asphalt Mixtures for permanent Deformation. Candidate has submitted draft thesis.
- (j) A. G. Kassa - Performance evaluation of asphalt pavements in Ethiopia, the application of HDM-4 Road Deterioration Sub-Model. Candidate has submitted his thesis for examination.

17.2 Ph.D.

- (a) G. A. Hall - "Use of asphalt concrete surfacing with un-

- bound bases in Kenya". Candidate was awarded Ph.D. in 1980.
- (b) O.O. Mbeche - "Transportation Study of Kisumu and the peri-urban". Candidate awarded Ph.D.
- (c) G.S.O. Agoki - "Road Triffic Accident Characteristics in Kenya". Candidate awarded Ph.D. 1989.
- (d) J.N. Gitonga - "Flourides in Kenyan Waters". Considerable data already collected and analysis is in progress.
- (e) G.K. Misoi - "A Study of Road Corrugations". Candidate awarded Ph.D. in 1986.
- (f) S.K. Mwea - A Study of Road and Airport flexible Pavements in Kenya. Candidate was awarded Ph.D. in 2001.
- (g) S.N. Osano - The Effects of Vegetation roots on stability of slopes. The candidate was awarded PhD in 2012.
- (h) S.O. Kasuku - Implications of Urban Transport Policy on Land Use in Nairobi City, Kenya. The project is in progress.

18. PUBLICATIONS AND TECHNICAL PAPERS

18.1 Theses

1. Gichaga, F.J. - A Study of Deflection Characteristics and Elastic Response of Flexible Pavements in Kenya. MSc thesis. University of Nairobi. 1971.
2. Gichaga, F.J. - Structural Behaviour of Flexible Pavements in Kenya. PhD thesis. University of Nairobi, 1979.

18.2 Papers Presented at International Conferences and Seminars

3. Gichaga, F.J. - The Quality of Training for Civil Engineering

- graduates in Kenya. 12th Annual Conference on Engineering Education in East Africa. **Dar-es-Salaam.** 13 – 14 December, 1974.
4. Gichaga, F.J. - Curriculum Development for Highway and Transportation Engineering. Subject Meeting in Civil Engineering. **University of Nairobi.** 25 – 26 September, 1975.
 5. Gichaga, F.J. - Integrated Engineering Training for Civil Engineers in Kenya. 13th Annual Conference on Engineering Education in East Africa. **Nairobi** November, 1975.
 6. Gichaga, F.J. - Training of Engineers in a Developing country. UNESCO International Group Meeting. **Cairo.** September, 1978.
 7. Gichaga, F.J. and Kipkore, S.K. – Violation of Traffic Laws in Selected Roads in Nairobi. I.R.F. IVTH African Highway Conference. **Nairobi** 20 – 25 January, 1980.
 8. Gichaga, F.J. - Pavement Design Considerations Under Tropical Climate. I.R.F. IVTH African Highway Conference. **Nairobi** 20 – 25 January, 1980.
 9. Gichaga, F.J. - The role of Engineering in the Promotion of Health Care. 9th Council Meeting of the Commonwealth Medical Association and 9th Annual Scientific Conference of Kenya Medical Association. **Nairobi** 25 – 29 March, 1980.
 10. Gichaga, F.J. - Evaluation of Flexible Road Pavements in Kenya. Conference on Criteria for Planning Highway Investment in Developing Countries. Institution of Civil Engineers. **London,** 17 – 18 May, 1982 (pp 153 – 160).
 11. Gichaga, F.J. - Strength of Flexible Road pavements in Kenya. International Symposium on Bearing Capacity of Roads and Airfields. **Trondheim,** Norway. 23 – 24 June, 1982. Published in Bearing Capacity of Roads and Airfields. Vol. 1. pp. 202 – 216. The Norwegian Institute of Technology. Tapir, N-7034 Trondheim. NTH (pp. 202 – 216).

12. Gichaga, F.J. - Distress Features of Flexible Road Pavements in Kenya. Seminar on Maintenance and Drainage aspects of Road Pavements. Indian Road Congress. Bangalore India. 1 – 4 July, 1982. (pp 11:89 – 11: 108).
13. Gichaga, F.J. - Behaviour of Flexible Road Pavements under Tropical Climate. Fifth International Conference on the Structural Design of Asphalt Pavements. Arnhem, Netherlands. 23 – 26 August, 1982. Published in Vol. 1. Proceedings. Pp. 221 – 239. Cushing Malloy Inc. Ann Arbor, Michigan. 1982.
14. Gichaga, F.J. and O.O. Mbeche – Transportation for Low Income People in Nairobi, Mombasa and Kisumu. IULA large Cities Forum. Nairobi, November 1982. (pp 29 – 51).
15. Sahu, B.K. and Gichaga, F.J. – Bearing Capacity of Red Coffee Soils of Nairobi. 2nd International ANSTI Seminar in Civil Engineering. University of Lagos, Nigeria. September, 1984..
16. Gichaga, F.J., Visweswaraiya, T.G. and Sahu, B.K. – Residual Red Soils of Kenya as construction materials for earthen Dams and Embankments. Conference on Materials for Dams’ 84 Monte Carlo. December 1984.
17. Sahu, B.K., Kimata, P.M. and Gichaga, F.J. – Compaction Characteristics of Nairobi Soils. First National Conference. Sudan Engineering Society. Khartoum. December 1984.
18. Gichaga, F.J. - Engineering Education as a Continuing Process of Development. Seminar on Continuing Education for Mechanical Engineers. Nairobi. April, 1985.
19. Gichaga, F.J. - Engineering and Economic Aspects of Highway Maintenance with reference to Kenya. International Engineers Conference Nairobi, 22 – 24 April, 1987.
20. Gichaga, F.J., Sahu, B.K., Visweswaraiya, T.G., Atibu, F.S.,
- Strength of Red Coffee Soils in Kenya. 8th Asian Regional Conference on Soil Mechanics, and

Foundation Engineering. Proceedings (pp 173 – 176) July 1987. **Kyoto, Japan.**

21. Gichaga, F.J., Sahu, B.K., Visweswaraiya, T.G. – Compaction and Compression Characteristics of Kenya Red Coffee Soils. 8th Panamerican Conference on Soil Mechanics and Foundation Engineering Proceedings. (pp 295 – 304). August 1987. **Castegena, Colombia.**
22. Gichaga, F.J., Murunga, P.A. Atibu, F.S.- Design and Performance Of Flexible Pavements under Tropical Environment. 9th Africa Regional Conference. Proceedings. September, 1987. **Lagos, Nigeria.** (pp. 559 – 564).
23. Gichaga, F.J., Visweswaraiya, T.G. and Sahu, B.K. – Prediction of Swell of Black Cotton Soils in Nairobi. International Symposium on Prediction and Performance in Geotechnical Engineering. Proceedings. June 1987. **Calgary. Alberta, Canada.** (pp. 259 – 266)..
24. Gichaga, F.J., Atibu, F.S., Sahu, B.K. – Horizontal and Vertical Movements of Red Clay Highway Embankments. Second International Conference on case Histories in Geotechnical Engineering. Proceedings. **St. Louis. U.S.A.** June 1988 (pp. 717 – 719).
25. Gichaga, F.J. and Mwea, S.K. – Structural Strength Condition for Some Flexible Road and Airfield Pavements Under Tropical Environment. Third International Conference on Bearing Capacity of Roads and Airfields, held in **Trondheim, Norway,** July 1990
26. Gichaga, F.J.- Deflections of Lateritic Gravel and Stone Base Pavements of Low Volume Tea Roads in Kenya. Fifth International Conference on Low Volume Roads. Held in May 1991, **North Carolina.** TRB. National Research Council.
27. Gichaga, F.J. Shelter, Transport, Water and Solid Waste Management. Regional Workshop on the Role of Parliamentary Office of Science and Technology (POST) in Kenya, Uganda and Tanzania. Kenya National Academy of Sciences. **Nairobi,** June, 2007.

28. Gichaga, F.J. The Engineer and the Vision 2030. International Conference on the Engineer and Vision 2030. The Institution of Engineers of Kenya. Conference papers. pp 70-73. **Nairobi**. May 2008.
29. Gichaga, F.J. Engineering Technologies for Production and Infrastructure. Fourth JKUAT Scientific, Technological and Industrialization Conference 4th-5th December, 2008.

18.3 Papers Presented at National Conferences and Seminars

30. Gichaga, F.J. and Bhogal, B.S. – Rebound Deflections of Flexible Pavements in Kenya. East African Institution of Engineers. **Nairobi**, December, 1971.
31. Gichaga, F.J. and Bhogal, B.S. – Rebound Deflections Relationship with Repetitions of Wheel Loads for Typical Flexible Pavements in Kenya. East African Institution of Engineers. **Nairobi**. December, 1971.
32. Gichaga, F.J. - Industrial Training for Engineering Undergraduates. Engineers Seminar. **Nairobi**. 25 – 27 March, 1981.
33. Gichaga, F.J. - Urban Transportation in Kenya. TRRL/MOTC/UON Highway Engineering Course. **Nairobi**, 8 – 19 November 1982.
34. Gichaga, F.J. - Pavement Design in Kenya. TRRL/MOTC/UON Highway Engineering Course. **Nairobi**, 8 – 19 November, 1982.
35. Gichaga, F.J. - Red Clay Soils and Black Clays. TRRL/MOTC UON Highway Engineering Course. **Nairobi**, 8 – 19 November, 1982..
36. Gichaga, F.J. - Storm Water Drainage Design for Roads TRRL/MOTC UON Highway Engineering Course. **Nairobi**, 8 – 19 November, 1982.
37. Gichaga, F.J. - Maintenance of Roads in Kenya. TRRL/MOTC UON Highway Engineering Course. **Nairobi**. 8 – 19 November, 1982.
38. Gichaga, F.J. - Conducting Technical Research. CIDA/Kenya Polytechnic/Mombasa Polytechnic Staff

- Development Seminar. Nairobi. February, 1983.
39. Gichaga, F.J. - Slow Sand Filtration Pilot plant Construction. IRC/MOH/MOWD/UON Seminar. Nairobi November, 1983.
 40. Gichaga, F.J. - Cooperation between the Faculty of Engineering and the Kenyan Industry. Seminar on Engineering Education – Industry Cooperation. University of Nairobi, September, 1985
 41. Misoi, G.K. and Gichaga, F.J. – Study of Vehicle Dynamics and Road Corrugations in Kenya. Seminar on Engineering Education– Industry Cooperation. University of Nairobi, September, 1985.
 42. Gichaga, F.J. - Transfer of Research Results to the Kenyan Industry. Continuing Education Course for Mechanical Engineering Graduates, Nairobi, July, 1986.
 43. Gichaga, F.J. - Design Standards, Performance and Maintenance of Roads in Kenya. Seminar Proceedings. Department of Civil Engineering, University of Nairobi, Vol. 1. 1987/88 (pp 61 – 65).
 44. Gichaga, F.J. - Research on Road Safety Measures. Seminar Paper. Ministry of Public Works. October, 1988.
 45. Gichaga, F.J. - Flexible Airport Pavement Design and Evaluation. Seminar. Department of Civil Engineering. **University of Nairobi.** February, 1989.
 46. Gichaga, F.J. Revitalizing professionalism in engineers. The Engineer in Society in the new Millenium. The Institution of Engineers of Kenya/Engineers Registration Board. Engineers Conference. Nairobi. April 2000.
 47. Gichaga, F.J.- Industrialization and Development in the 21st Century. Institution of Engineers of Kenya Conference. April, 2003.
 48. Gichaga, F.J. A Transformation of Kenya through

- industrialization. Professionals Forum. April, 2004.
49. Gichaga, F.J. Integration and outputs of Research, Science and Technology in Kenya's Development. National Workshop on Science and Technology June, 2004. Proceedings (pp33-36). Kenya National Academy of Sciences.
50. Gichaga, F.J. University-Industry Collaboration in Kenya. Institution of Engineers Conference. April, 2005.
51. Gichaga, F.J. Essentials and Promotion of Linkage between Research and Development and Entrepreneurship. National Workshop on Science and Technology Capacity in the Framework of Millennium Development Goals. The Kenya National Academy of Sciences. December, 2005.
52. Gichaga, F.J. The Impact of Professional Ethics in the Built Environment in Kenya. Workshop on Ethics and Integrity among professionals. The Association of Professional Societies in East Africa and the Kenya Anti-Corruption Commission Nairobi. 5th and 6th October 2006.
53. Gichaga, F.J. The Revival of the Numerical Machining Complex. Consultative Workshop on the Revival of the Numerical Machining Complex. **Naivasha**. 8th-10th March 2007.
54. Gichaga, F.J. Professional Ethics and Codes of Conduct in the Built Environment. Workshop on Ethics and Integrity among Professionals. Kenya Anti-Corruption Commission and the School of The Built Environment of the University of Nairobi. **Nairobi**. 22nd and 23rd March 2007.
55. Gichaga, F.J. Training Professionals for Infrastructure Development: The Troika of Government, Industry and Academia. Transformative and Effective Infrastructure Conference Report. (pp.77-82) **Nairobi**. 2nd-3rd November 2010.

18.4 Journal Papers

56. Gichaga, F.J. - The Trans-African highway – Mombasa/Lagos,

- Journal, Institution of Engineers of Kenya**,
September 1975. (pp. 16 – 21).
57. Gichaga, F.J. - Curriculum Development in Civil Engineering in Kenya. **Journal, Institution of Engineers of Kenya**. June, 1978.
 58. Gichaga, F.J. - Research on Flexible Road Pavements in Kenya. **Journal, Institution of Engineers of Kenya**. October 1978 (pp. 3 – 5).
 59. Gichaga, F.J. - Bearing Capacity of Crushed Stone Embankment. **Journal, Institution of Engineers of Kenya**. March, 1979 (pp. 14-16).
 60. Gichaga, F.J. - Study of Structural Behaviour of Flexible Road Pavements with Thin Bituminous Surfacing in Kenya. **Kenya Journal of Science and Technology**. Series A, No. 2, 1981. Nairobi. (pp. 105 – 115).
 61. Gichaga, F.J. - Laboratory Study of Deformation Modulus/ Time Relationship for Various Subgrade Soils Under Road Pavement Structure. **Kenya Journal of Science and Technology**. Series A. Vol. 3. No. 2, 1982 (pp. 63 – 74)
 62. Gichaga, F.J. - Road/Railway Embankment Slide at Mikindani in Mombasa. **Journal, Institution of Engineers of Kenya**. March/April, 1984. (pp. 35 – 39).
 63. Murunga, P.A., Gichaga, F.J. and Mawenya, A.S. – Computation of Deflections and Radii of Curvature of Flexible Road Pavements using Finite Element Method. **African Journal of Science and Technology**. Vol. 4, No. 2, 1985.
 64. Gichaga, F.J. - Transportation in Large Towns of Kenya. **Journal, Institution of Engineers of Kenya** Jan./Feb. 1985. (pp. 29 – 31).
 65. Misoi, G.K., and Gichaga, F.J. – Study of Road Corrugations in Kenya. **Kenya Journal of Sciences**. Vol. 7. No. 1. 1986 (pp. 35 – 48).
 66. Misoi, G.K., Gichaga, F.J. and Carson, R.N. – Effect of Vehicle Speeds on Corrugation Formation. **African Journal of Science and Technology**. Vol. 5 No. 1. April 1986. (pp. 47 – 58).

67. Gichaga, F.J. - Strength of Bituminous Mixes in Flexible Road Pavements. Kenya Journal of Sciences. Series A. Vol.8 No. 2 (pp. 59 – 77).
68. Misoi, G.K., Gichaga, F.J., Carson, R.N. – Corrugation of unmetalled roads. Part 2. Wheel Soil Interaction. Proceedings. Inst. Mech. Engrs. Vol. 203. (pp. 216 – 220) 1989.
69. Atibu, F.S. and Gichaga, F.J. – Study of Red Clay Highway Embankments with Reference to Collapse and cracking. Kenya Journal of Sciences. Series A. Vol. 10 No.2. (pp 41 – 83). 1996.
70. Mwea, S. K. and Gichaga, F.J.- Engineering properties of common subgrade soils below pavement structures in Kenya. Journal of Civil Engineering, JKUAT, Volume 7, March 2002.
71. Osano, S.N., Mwea, S.K., Gichaga, F.J.-Pull-out resistance of 3 different plant species and their application in slope stabilization works. Icastor Journal of Engineering. India. Volume 5 No.1, January 2012.

18.5 Other Papers

72. Gichaga, F.J. - Collection and analysis of the Base Year Public Transport Data. Nairobi Urban Study. December, 1971.
73. Gichaga, F.J. - An Inventory of Public Transport Base Year Network. Nairobi Urban Study. December, 1971.
74. Gichaga, F.J. - Highway Maintenance in the City of Nairobi. Nairobi City Council. **Nairobi**. March 1972.
75. Gichaga, F.J. - User – Reaction Study – Jamhuri Phase I. Nairobi City Council. **Nairobi**, July 1972.
76. Gichaga, F.J. - Practical Training for Engineers in Kenya. UNESCO Regional Experts meeting in Education and Training of Engineers. **Nairobi**. 11 – 15 December, 1972.
77. Gichaga, F.J. - Research – Oriented Education in Africa. Development and Co-operation. **D.S.E.**

No. 1/1986 (January/February). **Bonn**

78. Gichaga, F.J. - Historical Perspective of the Engineering Education in Kenya. **Student Engineer**. 5th Issue. September – Oct. 1986 (pp 3 – 4).
79. Gichaga, F.J. - The Engineer as a Professional and the Code of Ethics. **Student Engineer**. Vol. 5. No. 1 Jan./Feb. 1989
80. Gichaga, F.J. - Integrated Science Teaching in Kenya **EDUCAFRICA**.
81. Gichaga, F.J. - Education Programmes linking Science with Technology, Agriculture, Health and Improved Quality of Life. **EDUCAFRICA**.
82. Gichaga, F.J. - The Engineer and the Vision 2030. **Kenya Engineer**. Journal of the Institution of Engineers of Kenya. Volume 29. No.4. July/August 2008. (pp22-25).

18.6. Research Report

83. Visweswaraiya, T.G., Sahu, B.K., Gichaga, F.J. – Geotechnical Properties of Nairobi Soils. **National Council for Science and Technology**. May, 1986 (155 pages)

18.7 . Chapters in Books

84. Chapter 20 - Evaluation of Flexible Pavements in Kenya in Highway investment in Developing Countries. Published by **Thomas Telford Ltd. London**, 1983. (pp. 153 – 160).
85. Mwagiru, W. and Gichaga, F.J. – Transport, Communications and Energy. **Kenya – an Official Handbook**. 1988. (pp 100 – 124).
86. Chapter 13 - Engineering Education and Related Development in Kenya. Issues in Resource Management and Development in Kenya. **East African Educational Publishers**. 2000. (pp 183 – 192).

18.8 Books

87. Gichaga, F.J. and Rangasami, K.S. – Introduction to

Building and Civil Engineering Drawing.
Published by **MacMillan Publishers.**
1986. 130 pages.

88. Gichaga, F.J. and Parker, N.A. – Essentials of Highway Engineering. **MacMillan Publishers.** 1988. 313 pages.
89. Gichaga, F.J. - Road Pavement Engineering Research in the Tropics. Manuscript submitted for publication by Nairobi University Press.
90. Gichaga, F.J. Memoirs: Surviving the Academic Arena: My complex journey to the Apex. **University of Nairobi Press. 2011.** 304pages.

18.9 **Inaugural Lecture**

91. Gichaga, F.J. - The Engineer in Road Building: The Kenyan Perspective. **University of Nairobi.** 2nd November, 1989.

18.10 **35th Annual Tom Mboya Memorial Lecture**

92. Gichaga, F.J. - Educating a National Labour Force for Economic Recovery through Industrial Transformation. **Nairobi.** 30th November 2005.

19. **MAJOR CONFERENCES AND SEMINARS ATTENDED**

- 19.1 December, 1972 - UNESCO Regional Experts Meeting on Education and Training of Engineers. **Nairobi.**
- 19.2 December, 1974 - 12th Annual Conference on Engineering Education in East Africa. **Dar-es-Salaam. Tanzania.**
- 19.3 September, 1975 - Subject meeting in Civil Engineering, **University of Nairobi.**
- 19.4 November, 1975 - 13th Annual Conference on Engineering Education in East Africa. **Nairobi**
- 19.5 November/
December 1976 - UNEP Seminar on Non-waste Technology. **Paris, France.**

- 19.6 October, 1978 - UNESCO International Group Meeting **Cairo, Egypt.**
- 19.7 December, 1978 - UNEP/AAU Workshop on Environmental Education. **Nairobi.**
I was a member of the organizing committee.
- 19.8 January, 1980 - International Road Federation IVth African Highway Conference. **Nairobi.**
I was a member of the organizing committee and Rapporteur of the conference.
- 19.9 May/June, 1980 - Seminar on Road Safety, **Helsinki, Finland.**
- 19.10 March, 1981 - Engineers Seminar – **Nairobi.**
I was a member of the organizing committee and Rapporteur of the Seminar.
- 19.11 May, 1982 - Conference on Criteria for planning Highway. Investment in Developing Countries. I.C.E. Conference. **London.**
- 19.12 November, 1982 - IULA Large Cities Forum. **Nairobi.**
- 19.13 November, 1982 - TRRL/MOTC/UON Highway Engineering Course. **Nairobi.**
- 19.14 October, 1983 - World Federation of Engineering Organizations. 9th General Assembly. **Nairobi.**
I was a member of the organizing committee
- 19.15 November, 1983 - IRC/MOH/MOWD/UON Seminar on Water Supply and Sanitation. **Nairobi.**
- 19.16 December, 1984 - Conference on Materials for Dams. **Monte Carlo. Monaco.**
- 19.17 December, 1984 - UNESCO Seminar on Renewal of Science and Technology Teaching in Africa. **Dakar, Senegal.**
- 19.18 April, 1985 - Seminar on Continuing Education for Mechanical Engineers. **Nairobi.**
- 19.19 September, 1985 - GTZ/DSE/DAAD Conference on Promotion of Research-oriented Education and Training at African Universities. **Nairobi.**

- 19.20 December, 1985 - UNESCO Meeting on Science and Technology teaching in Africa. **Dakar, Senegal.**
- 19.21 April, 1987 - International Engineers Conference. **Nairobi.** I was Chairman of the Organizing Committee and Chairman of the Conference.
- 19.22 July, 1987 - First International Conference on Structural Engineering Analysis and Modeling. **University of Science and Technology. Kumasi, Ghana.**
- 19.23 June, 1988 - Second international Conference on Case Histories in Geotechnical Engineering. **University of Missouri, Rolla. St. Louis., U.S.A.**

20. DECORATIONS/AWARDS

- 20.1 December, 1986 - Elder of the Order of the Burning Spear
(EBS).
- 20.2 May, 1990 - Dr. Kaburu Memorial Award
(Institution of Engineers of Kenya Award)
- 20.3 December, 1990 - Moran of the Order of the Burning Spear
(MBS).
- 20.4 December, 1992 - Highest Award of Honour
SOKA University, Tokyo, Japan
- 20.5 September 2003 - Award of Excellence, Engineers Registration Board
- 20.6 April 2005 - Service Award
Institution of Engineers of Kenya.

21. COUNTRIES VISITED

Africa: Egypt, Ethiopia, Uganda, Tanzania, Zambia, Zimbabwe, Lesotho, South Africa, Senegal, Ghana, Nigeria, Sierra Leone, Mauritius.

Europe: Britain, France, Germany, Belgium, Netherlands, Finland, Malta, Cyprus.

America: United States of America, Canada, Mexico.

Middle East: Israel, Iran.

Far East: Thailand, Japan.