

# JOHN KIPROTICH BIRIR

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<b>CURRICULUM VITAE</b>		<i>Page 1 of 5</i>

<b>1. PERSONAL INFORMATION</b>			
<b>Year of Birth</b>	1982	<b>Current Organization</b>	University of Nairobi
<b>Home County</b>	Trans-Nzoia	<b>Designation</b>	Tutorial Fellow
<b>2. CAREER OBJECTIVES</b>			
<ul style="list-style-type: none"> <li>➤ To pursue research, consultancy and teaching in the fields of Science, Engineering, Nuclear Applications and Non-Destructive Testing (NDT)</li> <li>➤ To be the best that I can be in all that I do.</li> </ul>			
<b>3. EDUCATION</b>			
<ul style="list-style-type: none"> <li>➤ PhD. Nuclear Science, University of Nairobi, (2016 - Present)</li> <li>➤ MSc. Nuclear Science, University of Nairobi, (2011 - 2015)</li> <li>➤ BSc. Mechanical Engineering, University of Nairobi, (2002 - 2007)</li> <li>➤ KCSE, St. Joseph's Boys' High School, Kitale, (1997 - 2000)</li> <li>➤ KCPE, Waitaluk Primary School, Kitale, (1989 - 1996)</li> </ul>			
<b>4. WORK EXPERIENCE</b>			
<b>Duration</b>	<b>Organization</b>	<b>Position</b>	<b>Duties</b>
2017-Present	University of Nairobi	Tutorial Fellow	<ul style="list-style-type: none"> <li>➤ Teaching, Research and Consultancy in Nuclear Technology Applications and Non-Destructive Testing.</li> <li>➤ Teaching mathematics related and programming related topics.</li> </ul>
2014-2017	SGS Kenya (Société Générale de Surveillance)	NDT Supervisor & Trainer	<ul style="list-style-type: none"> <li>➤ Supervision of all NDT inspection</li> <li>➤ Review of all inspection reports</li> <li>➤ Sales of NDT services</li> <li>➤ Carrying out inspection within the Eastern Africa Region</li> <li>➤ Training of inspection staff members</li> </ul>
2009 to 2014	Ministry of Transport and Infrastructure	Lecturer (Mechanical Engineering)	<ul style="list-style-type: none"> <li>➤ Maintenance of vehicles, construction equipment, compressors and other equipment.</li> <li>➤ Capacity building training of government technical staff.</li> <li>➤ Training of engineering students.</li> <li>➤ Teaching mechanical engineering and engineering mathematics units for diploma and higher diploma in mechanical engineering.</li> </ul>
2007 to 2009	Mastermind Tobacco (K) Limited	Production Assistant	<ul style="list-style-type: none"> <li>➤ Production planning and control</li> <li>➤ Supervision of technical and support staff</li> <li>➤ Maintenance of production machines and equipment.</li> </ul>

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### 5. INDUSTRIAL ATTACHMENTS

- Brookside Dairy Limited, Ruiru (July - September 2006)
- Kenya Railways Corporation, Central Workshops, Nairobi (August - October 2004)
- Kenya Cooperative Creameries, Kitale (August - September 2003)

### 6. SKILLS DEVELOPMENT

Duration	Institution	Qualification	Subject
December 2017 to January 2018	Centre National de l’Energie des Sciences et des Techniques Nucleaires (CNESTEN) Morocco.	NDT Licence	<ul style="list-style-type: none"> <li>➤ NDT examination and Certification (Level 3) in Radiographic Testing, Ultrasonic Testing, Magnetic Particle Testing and Penetrant Testing.</li> </ul>
July 2017 to December 2017	Indian Institute of Technology Madras, India	PhD Course Work	<ul style="list-style-type: none"> <li>➤ Units studied for my PhD at the Indian Institute of Technology Madras include:                             <ul style="list-style-type: none"> <li>➤ ID6020 – Introduction to research.</li> <li>➤ ME6800 – Finite Element Analysis.</li> <li>➤ ME7840 – Signal Processing of Mechanical Systems.</li> <li>➤ NE6310 – Advanced Non-destructive Evaluation.</li> </ul> </li> </ul>
November to December 2015	Centre National de l’Energie des Sciences et des Techniques Nucleaires (CNESTEN) Morocco.	Certificate	<ul style="list-style-type: none"> <li>➤ NDT training (Level 3) in Radiographic Testing, Ultrasonic Testing, Magnetic Particle Testing and Penetrant Testing.</li> <li>➤ Training of trainers in NDT</li> </ul>
April 2015	Silverwing Middle East	Certification	<ul style="list-style-type: none"> <li>➤ Magnetic Flux Leakage (MFL) training and certification to Level 2</li> </ul>
September to December 2013	Centre National de l’Energie des Sciences et des Techniques Nucleaires (CNESTEN) Morocco.	Certificate/ NDT Licence	<ul style="list-style-type: none"> <li>➤ NDT training &amp; certification (Level 2) in Radiographic Testing, Ultrasonic Testing, Magnetic Particle Testing and Penetrant Testing.</li> <li>➤ Industrial applications of NDT methods including inspection of railways and petroleum industries to ensure safety &amp; continued availability of equipment for production</li> </ul>

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February to August 2013	Kenya Bureau of Standards	Certificate	<ul style="list-style-type: none"> <li>➤ NDT training on liquid penetrant, magnetic particle, ultrasonic, eddy-current and radiographic testing.</li> <li>➤ Industrial application of NDT methods including inspection of LPG tanks, LPG cylinders, pipelines, sugar roll mills.</li> <li>➤ Inspection of industrial products for compliance with national standards</li> </ul>
March 2013	University of Nairobi.	Certificate	NDT group training on Basics of liquid penetrant, magnetic particle, ultrasonic and radiographic testing.

### 7. CONFERENCES

July 2019	Portland, Oregon, USA	Participation	➤ 46th Annual Review of Progress in Quantitative Nondestructive Evaluation QNDE2019.
November 2018	Chennnai, India	Participation	➤ ISNT IGNITE NDE Symposium.
December 2017	Chennnai, India	Participation	➤ NDE 2017 Conference & Exhibition of the Indian Society for NDT (ISNT).
June 2016	Munich, Germany	Participation	➤ 19 <sup>th</sup> World Conference on Non Destructive Testing WCNDT2016.
October 2014	Prague, Czech Republic	Participation	<ul style="list-style-type: none"> <li>➤ 11<sup>th</sup> European Conference on Non Destructive Testing ECNDT2014.</li> <li>➤ International Conference on Non Destructive Testing (ICNDT) member states workshop.</li> </ul>
October 2012	Bruxelles, Belgium	Participation	International Conference on Physics for Development

### 8. NDT EXPERIENCE

I have participated in various NDT consultancies and inspection services across Kenya and neighboring countries in various sectors such as welds, pipelines, rolling mills, gas cylinders, sheet metal processing, buildings etc.

- Inspections of pipelines in Rwanda
- Inspection of pressure piping in gold mines, Tanzania
- Inspection of steel billets in steel mills, Uganda

### 9. AUDIT EXPERIENCE

- I am a trained auditor having taken various courses by KENAS.
- I am lead internal auditor for two labs accredited to ISO 17025 and have conducted several audits on the same. These are the University of Nairobi Mycotoxins Laboratory and the University of Nairobi Lighting Laboratory.

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## 10. PROFESSIONAL MEMBERSHIPS

- Non-Destructive Testing Society of Kenya (NDTS)
- Institute of Engineers of Kenya (IEK)
- Engineers Board of Kenya (EBK)
- KEBS Technical Committee TC106 - Dosimetry, radiometry and non-destructive metrology.

## 11. RESEARCH ACTIVITIES

- Improved resolution for ultrasonic testing
- Investigation of quality of welding in Kenya
- Baseline survey of Kenya's industrial capabilities and potentials

## 12. PUBLICATIONS

- J.K. **Birir**, M.J. Gatari and P. Rajagopal, 2020. Structured channel metamaterial for deep subwavelength resolution in guided ultrasonics. AIP Advances, 10(6). doi: 10.1063/1.5143696.
- J.K. **Birir**, W. Kairu, J. Gatari and P. Rajagopal, 2019. Back to Basics: Scattering of Ultrasonic Guided Waves. ISNT Journal of Nondestructive Testing & Evaluation. December issue.
- J.K. **Birir**, M.J. Gatari and P. Rajagopal, 2019. Channel structured metamaterials for super resolution imaging. Proc. 46th Annual Review of Progress in Quantitative Nondestructive Evaluation, Portland, OR, USA, 14-19 Jul 2019, in press.
- J.K. **Birir**, M.J. Gatari, S.K. Mwea, M.L. Muia and P. Rajagopal, 2018. Interaction of ultrasonic waves with defects. Proc. ISNT IGNITE NDE Symposium, IIT-Madras, Chennai, India, 3-4 Nov 2018, in press.
- **Birir** J. K., Gatari J. G., Rajagopal P. & Muia M. L (2018). Improved Resolution in Guided Wave Testing. NDT.net issue 2018-4. NDE 2017 Conference & Exhibition of the Indian Society for NDT (ISNT), 14-16 December 2017, Chennai, T.N., India.
- Gatari M. M., **Birir** J.K., Maina D. M., Mutuli S. M., & Kairu W. M. (2014). "Welding quality in Kenya: Application of radiography", The e-Journal of Nondestructive Testing, Vol. 19 No. 12, ISSN 1435-4934
- Gatari M. M., Kairu W. M., Maina D.M., Muia M.L, **Birir** J. K. (2014). "Quality of reinforced concrete used on selected building in Nairobi, Kenya", Presentation at the 11th European Conference on Non-Destructive Testing (ECNDT 2014) held October 6-10 in Prague, Czech Republic
- Gatari M. M., Kairu W. M., Maina D. M., Muia M.L, **Birir** J. K. (2014). "Measurement of compressive strength and rebar parameters of reinforced concrete in buildings in Nairobi, Kenya", Presentation at the 53rd British Institute of Nondestructive Testing (BINDT) annual conference held September 9-11 in Manchester, UK

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### 13. REFEREES

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