DATE: 2016-07-25

PROGRAM NAME: WOMANITY – WOMEN IN UNITY

GUEST NAME: PROFESSORS CATHERINE NGILA & ESTHER AKINLABI

SPEAKER	TRANSCRIPTION
DR. MALKA (INTRODUCTION)	Hello, I'm Dr. Amaleya Goneos-Malka, welcome to 'Womanity – Women in unity'. The show that celebrates prominent and ordinary African women's milestone achievements in their struggles for liberation, self-emancipation, human rights, democracy, racism, socio-economic class division and gender based violence.
DR. MALKA (GUEST SYNOPSIS)	Joining us in studio today in Johannesburg are two pioneering University of Johannesburg researchers, Professors who have been honoured at the 2016 Women in Science Awards, Professor Catherine Ngila and Professor Esther Akinlabi. Professor Catherine Ngila holds a PhD in Chemistry from the University of New South Wales, Australia. She has held academic positions at Kenyatta University, the University of Botswana and the University of KwaZulu Natal. In 2011 she joined the University of Johannesburg as a full Professor of Analytical Environmental Chemistry and in 2012 she was appointed as the Deputy Head of Department for Applied Chemistry in charge of research and postgraduate studies. And in 2013 she became the Head of Department up until June 2016. Prof. Ngila's current research work focuses on nanotechnology for water treatment, water quality monitoring and the development of analytical methods for detecting substances in various environmental matrices. Professor Esther Akinlabi is a Department Head for Mechanical Engineering Science. She obtained her Doctoral degree in Mechanical Engineering from the Nelson Mandela Metropolitan University in 2011. In 2016 she was promoted to the position of full Professor. Owing to her exceptional research publication output, Prof. Akinlabi is ranked among the top four researchers in the University of Johannesburg's Faculty of Engineering and the Built Environment and Prof. Akinlabi's research focuses on the field of advanced and modern manufacturing processes such as Laser Additive Manufacturing in particular friction, stir welding and laser material processing. Welcome to the show, ladies.
PROF. NGILA	**Thank you.**
PROF. AKINLABI	**Thank you so much.**
DR. MALKA	On Thursday the 11th of August this year the Minister of Science and Technology in South Africa, Naledi Pandor, honoured both of you at the National Department of Science and Technologies 2016, South African Women in Science Awards It's about breaking new frontiers, asking new scientific questions, investigating new possibilities and finding innovative solutions to support and promote the array of Science and Technology initiatives which requires tenacity and a mark of real advance in Science and research. Firstly, Prof. Ngila can you share with us some of the work that you do?
PROF. NGILA	**Right, no thank you very much and also greetings to our listeners. My research area as you indicated is in the Analytical Chemistry,**

	environmental chemistry where I'm in developing analytical techniques to monitor substances in water. I've got a focus in water, particularly because of the water quality, the water resources, water access and so forth and so on. Now, currently we are investigating nanomaterials so this is an area where you are dealing with nanosubstances, substances at one billionth of a metre and so you can see that is very trace levels in terms of the sizes and the dimensions of these nanomaterials. The beauty of these nanomaterials is that we can be able to monitor, you know, pollutants at very low levels, trace levels, in addition you can also be able to filter water because we are dealing with nanofilters, nanomembranes and these are materials, sorbents, absorbents that can be able to remove trace levels of pollutants, different types of pollutants can be removed. So that is my area of research.
DR. MALKA	And it's at a level where you cannot view it from the naked human eye.
PROF. NGILA	**No you cannot, actually you have to use advanced technology in terms of a high resolution scanning electro-microscope, you know the microscopes that the majority of the people who are familiar with microscopy, they know about light microscopy. Now we are dealing with electron microscopes and these are microscopes that can see in quads, things at very low scale. So we can actually be able to see but we have to use a microscope's transmission, an electro-microscope, scanning electro-microscope, atomic force microscopy. These are all techniques that you can be able to use to see these nanomaterials at very low dimensions.**
DR. MALKA	And Prof Akinlabi, you've got a very structured career path, so how do you set your goals and how do you set your targets, is it about, for instance, having some of these awards, does it give you more motivation?
PROF. AKINLABI	**As a young researcher, the way and manner I have structured my goal in the past which I also plan to continue, is always look up to people that have achieved far more in research and also in their academic career, ahead of me. And I always set my goals, some short-term, some medium term and also long term goals as well. And these I don't just do the goals as an individual I always try as much as possible to also carry my entire team members along as well. And this award in particular, I see it as an empowerment, I see it as an encouragement and a strong motivation for me as a young researcher to continue in the work that I'm doing, see that this is now having some recognition and some, it's been noticed nationally and also internationally. Thank you.**
DR. MALKA	And that's a significant achievement and building on from that, what would be your ultimate achievement in the space that you're currently in now?
PROF. AKINLABI	**My ultimate achievement is to see myself as an international researcher, a globally recognized researcher in the next five years of my academic career.**
DR. MALKA	We wish you all the very best of luck ...
PROF. AKINLABI	**Thank you.**

DR. MALKA	... in attaining that goal. Now you both bring a wide teaching portfolio in your respective expertise, whether it's on the electronic and electrical engineering or in the analytical and environmental chemistry and you're involved in several research projects which run concurrently and it gives you first hand insight into what I'd call the demographic changes that have taken place in your specific area of specialisation over the years and I ask this particularly from the context of this show, with it being a gender empowerment and gender equality show for women. Prof Ngila can you share with us your experiences from a female Professor's point of view on your professional journey. Are there more women in the field of chemistry and research today than from when you started a few years back in this area of specialisation?
PROF. NGILA	**No thank you very much again. You are right, the area of science, chemistry, environmental chemistry, analytical chemistry. Definitely, when we look at the time when I started, say in primary school, you know there aren't so many women scientists. Of course, we already had women who had made a mark, like for example, Professor Marie Curie and that is a famous lady and ....**
DR. MALKA	And I believe she won two Nobel Prizes.
PROF. NGILA	**Yes, she did.**
DR. MALKA	It wasn't just ...
PROF. NGILA	**Yes, she did and so as you grow up, you are looking up to see women who have made it, women who have also made it in other areas, not necessarily science and technology but also the fact that they're women and they've made it out there. So that was for me an eye opener, you know as I was growing up but, let me just say, my motivation was not so much, at that early stage, was not so much about doing science, a woman in science and all that, no for me the beginning point was I just wanted to get out of poverty. You know, I grew up in a background of rural set-up and my father was a Chief, during the colonial British colonial time in Kenya at that time and we were a large family and he believed in work. And so we have to wake up very early in the morning, first before you go to school, you have to make sure that you have cultivated a piece of, you know, land. You have to go and fetch water and so forth and so on. Now, while I was still in primary school, my sisters were older than me and they were already working in the city. So during the holidays, I would go to visit my sisters and then I see the lifestyle they were leading and then I looked back at what I'm doing and I told myself, no way, I have to work hard so that I can able to, you know, also go to the city and leave the rural areas. So that was my first motivation. Now, how did I then end up doing science. When I was in primary school, one of our relatives was the mathematics teacher in the primary school and because he wanted me to excel, he used to make sure that he beats me, you know, if I don't make it in mathematics. He would ask me a question, if I don't answer, I get a beat, you know, I'll get a slap or maybe a stroke and so because of that, I was always scared of being beaten, that's first and foremost, I also did not want to let my teacher down because he believed in me. So I had to work so hard in mathematics and mathematics being the foundation of many sciences. So I did very well in mathematics in primary school and when I went to high school, secondary school because the British system had ordinary level as**

	well as the advanced level, so at my ordinary level I would then be dealing with a Mr. McKenzie who was ... he had just trained at the Kenya Teachers College and he was very good. He used to dramatize everything about molecules and atoms and so forth and so on. So again, because I wanted, I was so mesmerised by the way he taught, I just wanted to do chemistry.
DR. MALKA	And I think so many teachers are fundamental in us finding ourselves and channelling us in the right direction.
PROF. NGILA	**That is true, that is true. So you know, us city girls, I did very well in chemistry at both O levels and A levels and I went to university. At my first degree I was the overall best student in the Faculty of Science 1986. So that already, the journey had started and so I just kept on working in chemistry and that is how I found myself in the chemistry field.**
DR. MALKA	And over the years, in terms of from a gender point of view, do you, looking back now do you see that there's more women in the field of chemistry?
PROF. NGILA	**Yes, actually today we would find that in fact, if you did, I haven't done statistics but you find that majority of the top achievers in chemistry, these days are actually girls, girls doing very well in chemistry, girls are doing very well in physics, not so much in physics. I think physics is going towards the engineering side like Esther. So you find then so many girls who are interested in physics, but chemistry and biology, it's really, girls really are doing very well. So that has become a very popular, you know it is now getting to be very popular in the sciences, that a girl is going to be doing science in terms of chemistry, in terms of biology and also we've got girls who have done very well in mathematics. So I would say today, the myth of science is only for men, is now no longer there.**
DR. MALKA	We have to overcome that.
PROF. NGILA	**It has been overcomed already because of the fact that there are so many women who have made it. I mean look at Professor Thobela Nycom, is my colleague in the field of chemistry and she has received so many awards. So again, you know we can be able to emulate, that one of us is doing so well in this particular field of chemistry. So I would say today unlike twenty years ago, unlike thirty years ago, the landscape has changed, that we've got equal opportunities for both girls and boys to do well for as long as you got interest in that particular area.**
DR. MALKA	And moving from the chemistry field to the physics field and the engineering side. Prof Akinlabi, do you think that the environment in South Africa is supportive enough towards female engineers and are there any differences in how female engineers are perceived today in comparison to a few years ago?
PROF. AKINLABI	**Ja, thank you. The environment in South Africa, I will say is very supportive of female engineers, both in the industry from my interaction with young girls that have graduated and working in the industry and also in the academic sector. But the perception still remains that engineering is a male dominated profession and the men still believe that this is our world and what are these women doing here. So that perception is still there and is changing, but a lot I believe still needs to be done with respect to improving the work relationship between the male counterparts to**

	females in the work place and also among our young girls as well, the students, the undergraduates and the postgraduates, they are catching up so well with respect the fact that I see in the team, both the male and the female students they relate so well in team building and practical sessions and doing things together as undergraduates do things working together.
DR. MALKA	And looking at that ratio you're observing between young men and young women coming in, what would you say is the ratio of entrants?
PROF. AKINLABI	**The ratio of entrants is still relatively low. At the moment in mechanical engineering, we sit at about only 10% of our student population are females. It is still about 90% are male in mechanical engineering but it's not the same for all the engineering disciplines. So this is peculiar to mechanical. Now if you look at the engineering field holistically, the overview, the percentages increased more, far more than 10%, it was somehow up to 20% or even 30%. If you look at the engineering disciplines, generally, now mechanical engineering on its own is now being referred to as a hardcore engineering discipline so it's still very very few women who want to take up the challenge to actually go into mechanical engineering.**
DR. MALKA	But I'm sure with both of you in the roles that you play and your capacity, you provide a function as a role model where people can look to you and know that it is possible and that these are environments that if I have the aptitude, if this is the choice of career path I want to take as a young woman that these opportunities are open and they're tangible.
PROF. AKINABI	**Definitely, I mean ja, for me as an individual, I try as much as possible, in my own little corner to be a role model to many young ones out there and that's was what actually [upon] me into the Ingenious Programme in collaboration with the NGI Council of South Africa. So I run workshops, engineering workshops in primary schools, basically we want to catch them young and these workshops are targeted at Grade 7 learners. So we go to schools, we use recyclable materials provided by the NGI Council of South Africa, we do the workshops with the students and then showcase ourselves. I go with a team of both young male and female students, undergraduates and postgraduates alike and we build a motor car, we build civil engineering structures and these are quite fascinating experiences for the young learners and we've always had very good feedback from the learners that they encouraged and they're motivated into taking up a career in engineering in the very near future.**
DR. MALKA	And I think with the work that both of you do, you've got really strong practical applications, whether it is in within the treatment of water or whether you are building a motor car as opposed to just the theoretical pieces that may wash over some students.
AD BREAK	
DR. MALKA	Now this programme, Womanity - Women in unity, it's all about gender equality and as we know it is becoming increasingly a global focus and as such building female leadership capacity is critically important for the future of women in our continent and across the world. How do you see female leadership, whether it is in the Parliamentary space, the university environment, the business landscape or any other field?

PROF. NGILA	**Looking at the landscape and in fact also listening to the speech by the Minister of Science and Technology, Madam Naledi Pandor, the speech shows that we're still lacking behind as women, particularly in the top management and in her speech, if I may quote her, "That this is an area that we want to continue working on and we are making progress" and indeed, because again when you look at historically, the women don't put themselves out there to join these positions or to occupy these positions. I think it's because of the fear that you don't want to be challenged, you don't want to sit there and compete. Also the opportunities ...**
DR. MALKA	So would you say, the positions exist?
PROF. NGILA	**Yes, they do exist.**
DR. MALKA	And it's a case that they're not applying for the roles?
PROF. NGILA	**In some cases they don't apply, there is such being shy, I would tell you just using myself as an example, I came to know about the Women in Science Awards and I kept on telling myself, no, no I have to do more research, I have to supervise more students, I have to get more funding, I have to do a lot of international collaborations and so forth and so on so that I can be able to accrue enough you know, enough productivity, in terms of how to put [?] for them before I can get there. But look at that perception and take a man probably, during that time, I already had my very strong CV. A man would have just looked at the CV and said, no, no, I'm going to go for it. So you see women always, they have to beat themselves up before you know they go out there and I think it's the same concept, the same attitude, the same mentality that women have that, oh no I'm not good enough, or no I have to wait, or no I don't want to be ridiculed and so forth. So these are the things that keep people, women behind and if you look it's also politics.**
DR. MALKA	The seeds of self-doubt.
PROF. NGILA	**Exactly, self-doubt so that self-confidence, it is not in every single woman and women take so long before, they actually need somebody to push them out there to tell them that you are good. I'll tell you why I applied for this position, I mean, sorry, why I applied for the awards. It's because a Professor Sinha at the Faculty, the Dean of Faculty of Engineering, because we sit in many committees together. He said, Catherine you should apply for this and I said, no, no that's for top women who are doing top research. He said, no Catherine I know your CV, you should apply for it and then I said, okay Prof if you say so I will apply. And that is how I started my, I went to the internet, I checked and then the research office contacted me because I think he gave out my name. So you can see it required a man to tell me I'm good enough so that I can apply for the awards. So you can understand it is a whole genetic make-up of a woman, always scared of going out there and it's not all women, of course there are those women who are already out there and they know what they want and they go for it. Again, it depends on the exposure you are bringing, you know. So as a girl I know that I'm not supposed to be talking when men are there so I must keep quiet, until I'm asked a question, then I answer and I keep quiet. It also happens, I go to the village today and let's say there is a wedding, there's negotiations about lobolo negotiations, I'm not**

	supposed to sit in that panel, you know because it's where the men are supposed to sit. So when you look at their upbringing and also their set-up, their culture, traditions, you know, women we lack behind because of the upbringing, the exposure is limited and also you are not allowed in some cases to, you know, to say out loud your things. So you realise that these are some of the constraints because of the environment, the background, the upbringing that, you know it keeps on lagging us behind, or holding us behind before we can actually go out there.
DR. MALKA	But culture, it is a constraint but also it's a human construct.
PROF. NGILA	**Yes.**
DR. MALKA	So we can change it.
PROF. NGILA	**Indeed. Yes. You are right, Amaleya, culture is dynamic, it changes. I tell you when I was growing up, as a girl I was not supposed to eat some parts of chicken, I was not supposed to eat goats, the head of a goat, but my father being liberal, he used to say, come, come outside. Everybody goes outside and we get a piece and then our mothers would say, no you're a girl you are not supposed to eat that. So you can see the culture, traditions and so forth. But today, I can go home, my brothers and sisters, we buy these goats and we slaughter them and eat all parts of the goat. So now you can see that is the cultures has progressed in terms of evolution, it has evolved as such, we are allowed to do some of these things. We are allowed to do this, we allowed to do that. So you are right, culture is dynamic and it will keep on changing and so therefore, with time you are going to find women out there doing, if not better than you know men doing just as well as men. So it is just a matter of time and exposure and encouragement that is going to get us there.**
DR. MALKA	And Prof Akinlabi, from your point of view, what areas do you think we still need to apply to women so that they can become more confident, they can put themselves out there more, take up those opportunities, what would you say we need to do?
PROF. AKINLABI	**Ja. Thank you. My advice on that, I would use my own personal experiences to speak out there to other women, ja. Beyond my background, I also come from a very very humble beginning. I grew up in a village and my story is very similar to Professor Ngila. I'm not going to repeat all that but very very similar to what she has spoken about today. Well the fact remains that I'm somebody that despite the culture, despite all, the upbringing and the way I was brought up and all that. I have parents that would always tell me, you can do it. I always have parents that would always tell me a lot of positive things about me, now look you are bored, you are confident, you can do it, do not take no for an answer, know that the fact that you are a woman doesn't mean, that you're a lesser human being to a man so always go out there, pursue your goals and see that you achieve. So academic excellence has been something that was ... I was made to know that it should be an attribute that should be part of me and my father, in particular, of blessed memory, he read civil engineering and he was actually the one that encouraged me into an engineering profession. He said, look my daughter it will pay you at the long run. It's a male dominated field, but as a woman if you go into the field and you're**

	one of the very few in that field, you will definitely see yourself excelling, even far more than the male counterpart. But then to the young women out there, we must every one of us, including me, must know that we are not lesser being to a man, to a male counterpart and for me what has brought me this far is hard work and diligence. And I also put those words out there too, to the young women as well, if you want to achieve in life, you want men to respect you in your own sphere as a woman, you must be hard working and be diligent in what we do. As an individual, I know, that because as a woman I have to work harder compared to my male counterparts for me to be recognized and look I'm doing something in my own little sphere. So I work far far harder and I always ensure that I go beyond the call of duty in any assignment that I'm asked to do. And I'd also like to mention that for this award, the Aweza Award in particular, the same Prof Sinha who encouraged Prof Ngila apply so told me as well, and said, Esther you have to go for this, I know you qualify for it. He encouraged me and told me, I'm nominating you, ensure that you package your document and submit for the award and I did and see it helping to be. I believe he went beyond Professor Ngila and myself. He is actually the happiest person today, when he got the news and everything, he was really really excited about that and look I knew the CVs of these women and I told them to go for it. They did and today they ended up being winners of the various categories and I want to say thank you to Prof Sinha.
PROF. NGILA	**And Professor Marola.**
PROF. AKINLABI	**And Professor Marola as well he also gave a lot of support for those that applied for the award. Ja, no Professor Marola is our DVC research. He really believes in us and you know, he encourages, particularly in the field of science and engineering but I meant to say in the area of research because he's in charge of research productivity in the University of Johannesburg. So he ... when he sees talent he follows that and he will call you on the phone, he would tell you, like the day of the award, the following day, it was just before seven o'clock in the morning, he called me and I said, Oh Prof, don't call me because I'm with the Minister, now you know my phone was supposed to be on silent, he said, no I want to take this minute, just to tell you, we are so proud of you and Esther, and I know you are going to be in the Morning Live programme and so I wish you all the best and I will speak with you later. Even today he sent me a message, he said, I know you are going for a Channel Africa and I wish you all the best, just know that we are very proud of you at the University of Johannesburg.**
DR. MALKA	That's fantastic and research is such a key metric in our academic institutions that worked, we're inspired to do and to advance.
PROF. AKINLABI	**Indeed.**
DR. MALKA	And it's about advancing humanity because everything that we do is about building on the next level that's gone before us leading into the future.
PROF. AKINLABI	**Very true.**
AD BREAK	

DR. MALKA	Now Prof, turning more towards personal level, one of the questions that I ask all my guests on this programme who have made significant achievements in their respective fields is about the factors which have contributed to their success and their achievements, some talk about hard work, both of you have mentioned, your parents have been instrumental in guiding you forwards and Prof Ngila, you've also shared some of your personal background as you were growing up. So starting with Prof Akinlabi, can you share with us some of the pivotal moments in your life growing up, on what influenced you and what had the biggest impact to make you the person you are today?
PROF. AKINLABI	**Thank you Amaleya. And thank you to the listeners as well, I must say that I am one of the very few women, career women that has been very fortunate to have a very good support system. I grew up through the ranks to see myself being very supportive from my immediate family, my husband has been very supportive, the children as well and I try to juggle my schedule, the busy schedule and trying to do my primary roles as being a mother, as being a wife and being at home and you are the chief chef and you have to do the cleaning and everything, so I've been able to juggle all of that together and I realise that over time we do all these things together, we do the cooking together, the cleaning the house, we do all of this together and also to, some colleagues as well, that are able to also chip in, one or two things and to work with me and also I must also mention, my research team I have a formidable big research team, seven postdoctoral fellows and 28 postgraduate students. They believe in me as their supervisor, we are fond of each other, we work together, we are in the laboratory together and I have a very good team that we work together. So all these are what I see today, that has contributed in one way or the other to the achievements, the success of who I am today and that is Esther, holistically. Thank you.**
DR. MALKA	And Prof. Ngila, what would you say has been the best lesson that you've learnt throughout your career to date?
PROF. NGILA	**Well, you've already mentioned hard work so that definitely I can testify to that. I have worked very hard over the years. But also, as Esther put it, support system, support system is very important, as she mentioned, that my father was very proud of me. I would tell you my father was not very learned ... he wasn't, I think he only did, you know, lower primary, that is the furthest he went but he was a Chief during the colonial time in Kenya during the British rule. I remember when I was in A levels you know in the upper high school, he would write letters to me and when I received the letters the girls would be laughing, you know why? Because instead of, and that is just translating from our language in Swahili, ikiSwahili, he would write there, Dear Bwana, Bwana means Mr. So he used to call me Bwana which is Mister and you could tell that he was so proud of me, you know, having passed well to go to high school. So that was already an encouragement and unfortunately he passed away so when I just finished my A levels, but on his death bed, he asked a question, he said, has she managed to get the highest degree? He didn't understand what degree meant, he seemed ... he knew what degree meant but he didn't know about Masters and PhD. So he said, did Catherine get the highest degree and so he was told, yes, because I had just passed my A levels to go to the university and then you know, within hours he passed away. So I always look back and I say, you know, I believe that my father's blessings have**

	taken me where I am. But also, now coming back to also the environment where I've grown, my sisters, my brothers and my children now. But also when I look at the university, at the high school, at the university, I also always had people who were always out there for me, you know, I remember when I was doing my Masters, when I got a first class Honours, being the best student, I went to teach and then one of the mathematics teacher because it was my maths teacher at the university, he called me and he looked for me and he said, no you must come back and do your Masters. I said, no I just want to teach. He said, no you must come back you got a scholarship from the German Academic Exchange Services, you must come and do your Masters. So I came back to the university, enrolled for Masters and now from Masters obviously one thing led into another, I got another scholarship to go to Australia and then of course, the path is made. So now the environment around me, helped me you know to realise that, I've got this talent, I can work hard and I should be able to work hard and get there. So that is my background, in terms of the environment and also in terms of the environment and also in terms of the support of who around me, who have helped me to get where I am today. Thank you.
DR. MALKA	Well, thank you for sharing some of the ingredients and also the recipe that has contributed to both of your successes.
PROF. NGILA	**Yes.**
DR. MALKA	We are unfortunately are running out of time and it's probably the worst part of the show, is that we never have enough time.
PROF. NGILA	**Yes.**
DR. MALKA	But in closing the conversation, our broadcast goes across Africa and I know that your roots, Prof Ngila are from Kenya.
PROF. NGILA	**Yes.**
DR. MALKA	And for you Prof Akinlabi, you're from Nigeria. So in your own words may I ask you each just to, in closing our conversation today to share a few words of inspiration or of wisdom that you'd like to pass on to women in our continent.
PROF. NGILA	**To start with me, Amaleya, I know that we are closing and of course it's short time, but my message out there to women, who are in the science, women who are in economics, women who are doing whatever they are doing, just put your faith and your efforts and you know where you are going, you know your goal and you want to get it. Of course, there are going to be challenges on the way, but just keep focused and work as much as you can towards that particular goal and you are going to get there. [African language] Your research [African language].** Thank you.
DR. MALKA	Thank you very much. And to you, please Prof Akinlabi.
PROF. AKINLABI	**Ja. From me, I always say that hard work and diligence pays. You can never go wrong. If you're hard working, whatever you find yourself doing and also you're diligent in that, which you find yourself doing and to the women out there, the younger ones.lgo in particular, do not look down on yourself, always go for it, know that you are wired to excel in life. Thank**

	you.
DR. MALKA	Thank you so much for sharing your stories, for sharing your passion and the successes that have come out of the fruits of your labour.
END PROGRAM	