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"Low cost" telemedicine platform for developing countries

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Purpose: Design a "low cost" system of medical teleconsultation, telesonography, teleradiology, teledermatology, tele endoscopy and of teletraining between expert and isolated centers particulary for developing countries.

Materials and Methods: A camera IP and an internet video server installed on an isolated site allow a medical remote consultation, a teledermatology, a telesonography and a tele endoscopy if an internet connection of relatively high flow connects the isolated center and the expert center.

If the internet connection flow is low, remote control software allows to realise telesonography, tele radiology and tele endoscopy sessions.

The platform was tested on 60 patients between the CHR Tsévie in Togo (40 km from Lomé-Togo and 4500 km from Tours-France) and CHU campus at Lomé and Trousseau at Tours.

Results: An internet flow rate of 1 Mbps allowed sessions of medical remote consultation, telesonography, teleradiology, and teledermatology with satisfactory results. With an internet flow of 512 kbps, the remote control software allowed us to realise successfully telesonography, teleradiology and tele endoscopy sessions.

Conclusion: This system of telemedicine using a lesser infrastructure cost and or on-line free software, will improve the accessibility and the equity of health care to the patients living in zones medically isolated.

Biography

Kokou Adambounou was graduated as Medical Doctor in 2007 from University of Lome (Togo) and had his certification in Diagnostic Radiology from University of Abidjan (Ivory Coast). He has completed his Ph.D. in Biophysics in 2012 (33 years old) from Francois Rabelais University of Tours (France). He was the winner of Young Researcher Prize of SFR (French Society of Radiology) in 2010. He is Associate Professor of Biophysics and Radiology in the Medical faculty of University of Lomé, and the head of the Telemedicine Unity of the Campus Teaching Hospital. He has published more than 20 papers in reputed journals.

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Development of nanoporous alumina membranes for treatment of textile effluent

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Textile production has been considered as an activity of high environmental impact due to the generation of large volumes of waste water with high load of organic compounds and strongly colored effluents, toxic and difficult biodegradability. This thesis deals with obtaining nanoporous alumina ceramic membranes for filtration of textile effluent in the removal of contaminants, mainly color and turbidity. Two types of alumina with different particle sizes as a basis for the preparation of formulation for mass production of ceramic samples and membranes were obtained. The technological properties of the samples were evaluated after using sintering conditions: $1,350^0$C-2H, $1,450^0$C-30M, $1,450^0$C-2H, $1,475^0$C-30M and $1,475^o$C-2H. The sintered samples were characterized by XRD, XRF, AG, TG, DSC, DL, AA, MEA, RL, MRF-3P, SEM and intrusion porosimetry by mercury. After the characterization, a standard membrane was selected with their respective sintering condition for the filterability tests. The effluent was provided by a local Textile Industry and characterized at the entry and exit of the treatment plant. A statistical analysis was used to study the effluent using the following parameters: pH, temperature, EC, SS, SD, oil and grease, turbidity, COD, DO, total phosphorus, chlorides, phenols, metals and fecal coliform. The filtered effluent was evaluated by using the same parameters. These results demonstrate that the feasibility of the use of nanoporous alumina membranes for removing contaminants from textile effluent, with average pore size ranging in the nanometer scale, with total porosity of 29.66%, and average percentages of color removal efficiency of 89.02%, 92.49% of SS, turbidity of 94.55%, metals 2.70% (manganese) to 71.52% (iron) according to each metal and COD removal of 72.80%.

Biography

Kesia Karina de Oliveira Souto Silva completed degree in Textile Engineering from the Federal University of Rio Grande do Norte - UFRN, Master's in Mechanical Engineering from the Federal University of Rio Grande do Norte - PPGEM - UFRN in Termociências with application in the area of Environment and Industrial Textiles, Ph.D. in Science and Materials Engineering from the Federal University of Rio Grande do Norte - PPGCEM - UFRN, with emphasis on non-metallic materials. Has interest and experience in the scientific fields of Ecology and Environment, Advanced Wastewater Treatment, Separation Processes, Nanotechnology, Biotechnology and Chemical Processes Textiles.

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