

Optical Up-down Link Conversion and Modulation using WGM Signals for Short Range Telepathic Communication

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Abstract: The human contact memory is established by registering perception when the two people becomes in contact, which is kept (allocated) within the human brain space permanently. The security codes between these two connections are generated and the information is blocked by these security codes if the end user is not the required one. On the other hand, the unlocked information is transmitted if the required end user is confirmed by the feedback brain signals (spirit signals), i.e. telepathic link, where finally, the required security codes are opened and the information is transmitted. In this study, the silicon-on-insulator PANDA microring resonator with conjugated mirror can be used as the probe medium which is able to transmit, retrieve, amplified and filtered the brain signal as the signal pass through the ring waveguide due to the nonlinear Kerr effect. Ring resonator system includes of the conjugated mirror which provide the signal's whispering gallery mode (WGM). The pattern of the WGMs signal represents the positive or negative brain activities of the subjects. Similarly, the quantum flip-flop signals can also be generated using a coherent light source propagating within micro-optical device, where the Rabi oscillation frequency can be established to start/stop the transmission bits. The stream of information can be securely transmitted in the telepathic communication, which is suitable for short range usage.

Keywords: Optical modulation; Telepathic communication; Telepathic telephony; Telepathic security; Telepathic memory

1. Introduction

In future technologies, the voiceless telephone will be one of the advance technology, which can be used by all users in which the mental perceptions can be transmitted directly to the other specific person (brain), such an instrument is known as a telepathic telephone [1, 2]. Human telepathy has become the interesting aspect for many researches and applications [2-5], one of them is the use as telephone or mechanism for communication, which can be used by all users. Telepathy is used to control the brain functions, scan the memory of other people, receive and transmit the thoughts directly between two people without any physical means such as vocal or auditory mechanisms and it can exists across space among various races [6] with a vested interest to learn the memory of other species and enhance or recover lost memories. The telepathy ability establishes the communication without use any tools such as speech or body language from one to another. Extra sensory or anomalous cognition always connected the telepathy with paranormal phenomenon, for an example precognition, clairvoyance and empathy. Through this, many scientists still do not believe the telepathy phenomenon and remains controversial although many experiments have been conducted [7].

Telepathy is a communication between a person (sender) to another person (receiver) by using an extrasensory perception (ESP) [8] without any channels of communication. This field of communication still cannot be proved by scientists but some researcher only conducts the parapsychological studies that produce similar result towards telepathy communication. The technique used an agent to guest five special decks of card symbols meanwhile the receiver to choose which the order of the agent was concentrating. [9]. Certain telepathy can share some thought only with their own either send information or receive and vice versa [10]. For an instance, Betazoid races can transfer information to other empathy, in the meantime can receive thought and feeling from almost any mind [11]. Generally, some healthy individual races inherit this ability, but for human species this telepathy is infrequent [12]. Telepathy form of interaction can be possible otherwise might be impossible [13]. Ambassador Kollo has been linked by telepathic established by Miranda Jones [14]. Betazoid and Vulcan have created a moral code (sometimes the real law as the Ullians) to dictates any circumstances. Furthermore, Vulcan telepathy usually not only in form of mind meld, but combine with logical and mental conditioning [15, 16]. Mostly People can heard pulses of microwave as "pops" or "clicks" and buzz pattern of noise if the signal is uniform [16]. In this field, the application of WIFI's signal also have been used as the probe sensing for the human activity and gesture recognition through a mobile phone and achieved accuracy of 0.51 [2]. Combination of pulse power and pulse width can be worked with wide range of frequencies especially low frequency 125MHz below the microwave. From the unclassified studies, the frequency and pulse generation are good and optimum to generate the microwave hearing.

In this paper, the telepathic communication between two persons is described and the brain signal is used for mapping and imaging the brain activities. The optical microring resonator made of a nonlinear material as silicon on insulator (SOI) in the PANDA configuration is used as the probe medium which is able to transmit and retrieve the brain signal as shown in Fig. 5 (a). The amplification and filtering of the brain signal is achieved while the signal propagating in the nonlinear resonator system with conjugated mirrors and provide the signal's whispering gallery mode (WGM). The pattern of the signal is represented in form of positive or negative brain activities of the subjects. The up-down link conversion using WGM signals and nano-antenna for short range telepathic communication and ad hoc network can be plausible and described.

2. Telepathic Information

The scanning image information is recognized by million brain cells and is addressed within the brain memory by many layers and sub-layers in the brain [17]. The image recovery is realized by comparing the image pattern recognition, in which the

probability of image pattern projection as the identical image probability is the criteria of recovery and conclusion. The projection of coherent signals bring the de-coherent states, whereas the collapse of waves realizes the required results (required image recovery). In mind control signal, pulse peak power for skull surface at about 3 watts per centimeter square and small percentage is needed for each pulse's cycle time. The 250-watt head lamp at distance of one meter obtains 3-watt/sq cm of power. Furthermore, the power of each cycle becomes low and undetectable when the pulse train is off. This usually use in radar and military communication in which the frequency acts as noise-to-skull carrier similar to television or cell phone channel. This concept is called spike wave. Spread spectrum technique is used to reduce interference and detection of each sensitive frequency which is called band of frequency. Carrier frequency is called "hop" around the specific band usually inside the spread spectrum and this spectrum is received by a spectrum analyzer and appear as "static" or noise. Dr Joseph C. Sharp and Mark Grove from Walter Reed Army Institute of Research had successful unclassified voice to skull experiment in 1974 [16, 18].

Voice waveform is passed down zero axes every time and a Frey-type audible pulse is transmitted. It is reported that the pulse transmits sound as buzzing, clicking or hissing and this occurs when the carrier densities are low as microwatts per square centimeter ranging from 0.3-3.0 GHz. So, by choosing right pulse characteristic, intelligent speech can be created. Figure 1 shows the diagram of input pulse imaging system based on nonlinear PANDA microring resonator system which comprises of a main micro ring in the middle of two bus waveguide and attached with two small nano rings symmetrically. This diagram is described using the pulse-shaping technique.

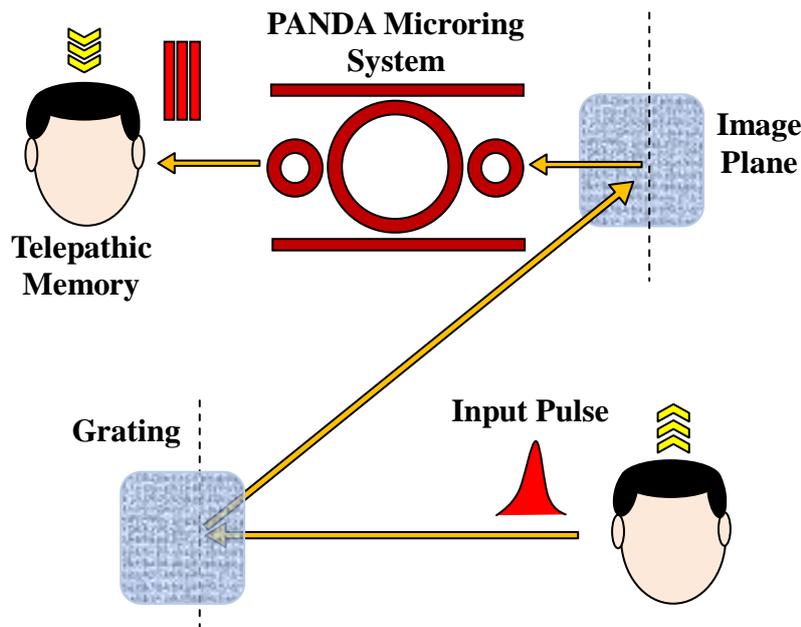


Figure 1. Schematic diagram of the femto-second pulse imaging system based on nonlinear micro ring resonators.

This system suggests that the transform-limited laser pulse can be decomposed into the spectral domain and modified the spectrum by using one dimensional fixed or programmable spatial mask or hologram. The modified temporal spectrums are then recombined into the time domain. For an input pulse such as a Gaussian pulse without information, the optical field in the form of Gaussian pulse can be expressed as [19].

$$E_i = A_i \exp\left[\frac{z}{2L_d} - i\omega_0 t\right] \quad (1)$$

and an output pulse from image plane

$$E_s = A_s \exp\left[\frac{z}{2L_d} - i\omega_0 t\right] \quad (2)$$

where the amplitude of optical fields are represented by A_i and A_s . The propagation distance is demonstrated by z . The propagation time for soliton pulse moves at the group velocity in a frame is $T = t - \beta_1 \times z$. Here, soliton phase shift time is t , and ω_0 is the frequency shift of the soliton. $L_d = T_0^2 / |\beta_2|$ represents the dispersion length of the soliton pulse, where T_0 shows soliton pulse propagation time at the initial input. The coefficients of the linear and the second order terms of the Taylor's expansion of the propagation constant are β_1 and β_2 , respectively. For the soliton pulse in the micro ring device, a balance should be achieved between the dispersion length (L_d) and the nonlinear length $L_{NL} = 1/\Gamma\phi_{NL}$, where $\Gamma = n_2 K_0$, is the length scale over which dispersive or nonlinear effects alter the beam diameter. For a soliton pulse, there is a balance between dispersion and nonlinear lengths,

hence $L_d = L_{NL}$ [20]. Consider a pulse created from pulse-shaping device occurrence on the first reflecting grating of the pulse imaging system as shown in Fig. 1 at an incidence angle φ . The grating is arranged such that the first diffraction order for the spectral element at the center carrier frequency ω propagates into the direction of the optical axis of the system. As the pulse arrives at plane 2, a single spectral component of the incident field at an arbitrary frequency ω is produced in a diffracted field. After plane 2, the pulse carries information from image which is then converted into telepathy using single ring resonator.

Based on the coupling coefficient of microring resonator (MRR), a fraction of input soliton pulse is coupled into the MRR. For long dispersive path, E_i causes the nonlinearity effect built inside the MRR due to change of the refractive index with optical power. Here, the power dependence of refractive index is responsible for the Kerr effect [21]. The refractive index can be written as [22]

$$n = n_0 + \left(\frac{n_2}{A_{eff}}\right) |E_s(t)|^2 \quad (3)$$

where n_0 and n_2 are the linear and nonlinear refractive indices respectively and A_{eff} shows the effective mode core area of the waveguide. In each round trip a phase shift of $\xi = \exp(-\alpha L_i/2 - iKnL_i)$ is added into the soliton pulse while propagating via MRR. One round trip loss coefficient is considered as $x = \exp(-\alpha L_i/2)$ where L_i is the circumference of the MRR and α is the waveguide absorption coefficient. The vacuum wave number and refractive index of the waveguide are represented by K and n , respectively. The pulse passes through the MRR and input soliton pulse after each round interfere with each other. The optical outputs from the first ring resonator is given as

$$E_{out}^1 = E_s \left(\frac{C_1 - (1 - \gamma_1)\xi_1}{1 - C_1\xi_1} \right) \quad (4)$$

where $C_1 = \sqrt{(1 - \kappa_1)(1 - \gamma_1)}$ is the fraction of input pulse coupled to the MRR, κ_1 is the coupling coefficient of the first ring and γ_1 shows the fractional intensity loss of the first coupler. The output pulse from each MRR in proposed system (Fig. 2) is fed to the next MRR. The output pulse from a system of N micro ring resonator can determine as

$$E_{out}^N = E_s \prod_{j=1}^N \frac{C_j - (1 - \gamma_j)\xi_j}{1 - C_j\xi_j} \quad (5)$$

The output power from each ring can be determined as

$$P_{out}^j = (E_{out}^j) \cdot (E_{out}^j)^* = |E_{out}^j|^2 \quad (6)$$

In order to generate telepathy pulse, a Gaussian pulse with power at 3Watt is injected into the ring resonator as shown in Figure 3(a). The linear refractive index of the system is fixed to $n_0 = 3.48$ and the nonlinear refractive index is $n_2 = 4.2 \times 10^{-17} (m^2/W)$. The waveguide loss and coupler intensity loss are $\alpha = 0.2 (dB/mm)$ and $\gamma = 0.2$, respectively. The coupling coefficients of the micro ring resonator vary between 0.1-0.5. The effective mode core areas of the microring resonators are varied ranging from 0.1 to 0.5 μm^2 . When the input optical pulse meets the resonance condition in each microring resonator, it couples to the ring and travel inside it. Here telepathy pulse can be achieved based on the normalized pulse and resonant mode numbers of microring resonator optical pulse act as constructive and destructive interference. Therefore, signals are suppressed over frequency interval and the overall intensity in this frequency domain is amplified according to the superposition principle. The energy per area for optical breakdown decreases with the pulse duration which is recognized with lasers operating in the telepathy pulse duration regime.

From Figure 3(b), pulse is sliced and amplified into smaller signal over spectrum. Figure 3(c) shows the normalized telepathy pulses in several roundtrips range which are suitable for telepathic memory and secure communication. Figures 4(a), 4(b) and 4(c) show the expansions of Figure 3(c) from proposed system which shows the normalized telepathy pulse in several terahertz ranges. To secure the communication channel between two sources, two telepaths may combine their talent. In order to break the security, two individual skill level must be equivalent. Evidently, when three or more skilled telepaths form a secure link, it becomes difficult to break it. Synthetic telepathy is capable to recover mind reading and secured communication and it allows us to search our own memories not just those on the Web with something like the efficiency and reliability of a computer search engine. Synthetic Telepathy system can be used for intelligence gathering and interrogation. Furthermore, in communication system, limited application as any nation with a similar setup should either listen in, or pretend to be the interface. As such, it raises important ethical and legal questions, especially the question of secrecy given that all major governments would be aware of the system. Memory telepathy is the art of electronically transferring thought directly to and from a brain. The primary objectives are to expose technology that can provide point to point communication from one brain to another, to localize unwanted sources of telepathic communication, and to provide evidence that technologically implemented telepathy is possible[1]. Figure 5 shows the schematic sketch of transfer pulse as telepathy.

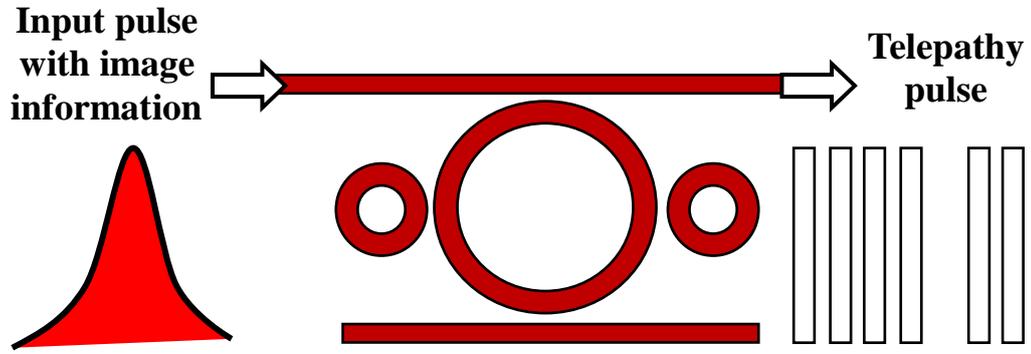


Figure 2. Schematic of telepathic information

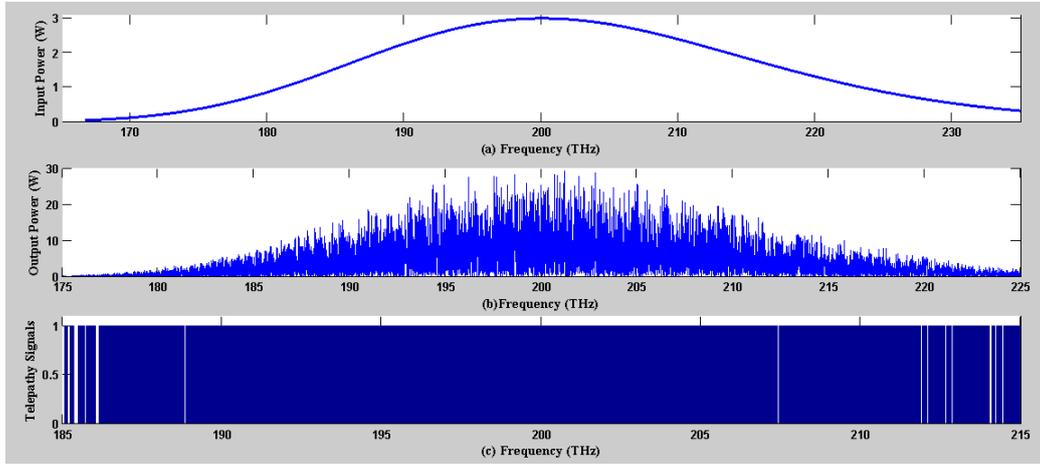


Figure 3. Result of the output signals from proposed system where (a) shows the input Gaussian pulse, (b) the chaotic signals generation

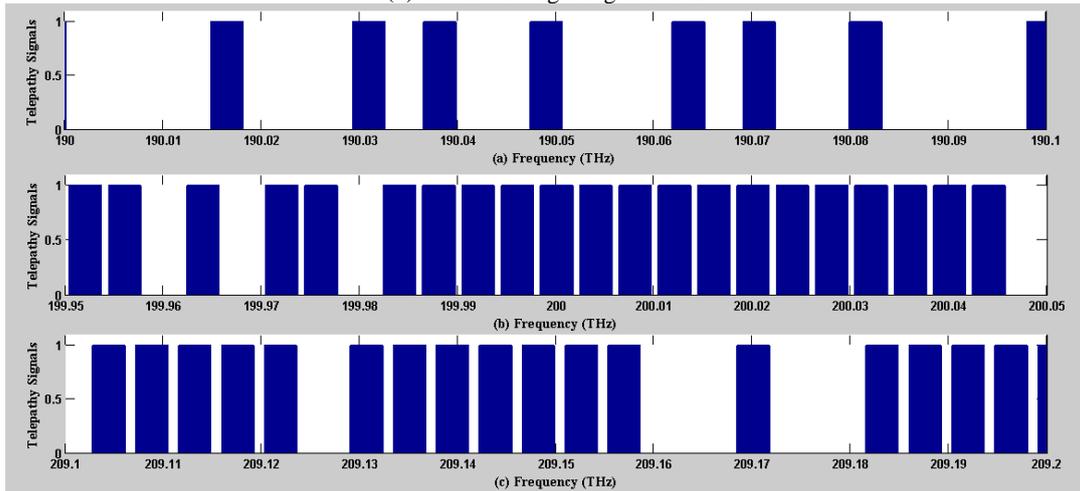


Figure 4. Expansion of figure 3(c) from proposed system where (a), (b), (c) shows the normalized telepathy pulse in several terahertz range.

3. Telepathic Modulation and Up-down Link Connection

The silicon-on-insulator (SOI) PANDA microring resonator can be used as a probe of the telepathy communication which comprise of reflective mirror at through and drop port as shown in Fig. 5(a). The brain signal is connected by the external coupling of the proposed probe and resonator system. The optical field E_{in} of the brain signal is triggered into the input port of resonator system which coupled into the ring waveguide by the ratio of the coupling coefficients. The nonlinearity effect is occur to the optical field as it propagated into the ring waveguide due to the pass phase shift. The pass phase shift appears to the optical field which travels along bending direction of the waveguide which changes the optical properties due to the attenuation loss and the intensity-dependent refractive index which known as nonlinear Kerr effect. Three rings waveguide in a configuration are used to increase the nonlinear effect of the brain signal. The add port is used as a controller for the output signal amplification which is used to provide a clearer signal for the telepath transmission. The brain signal is confined in the resonator system by

inserting the reflective mirror which reflects a portion of the optical signals back into the system as E_{In}^* and E_{add}^* in Fig. 5 (a) which can produce WGMs of the signal.

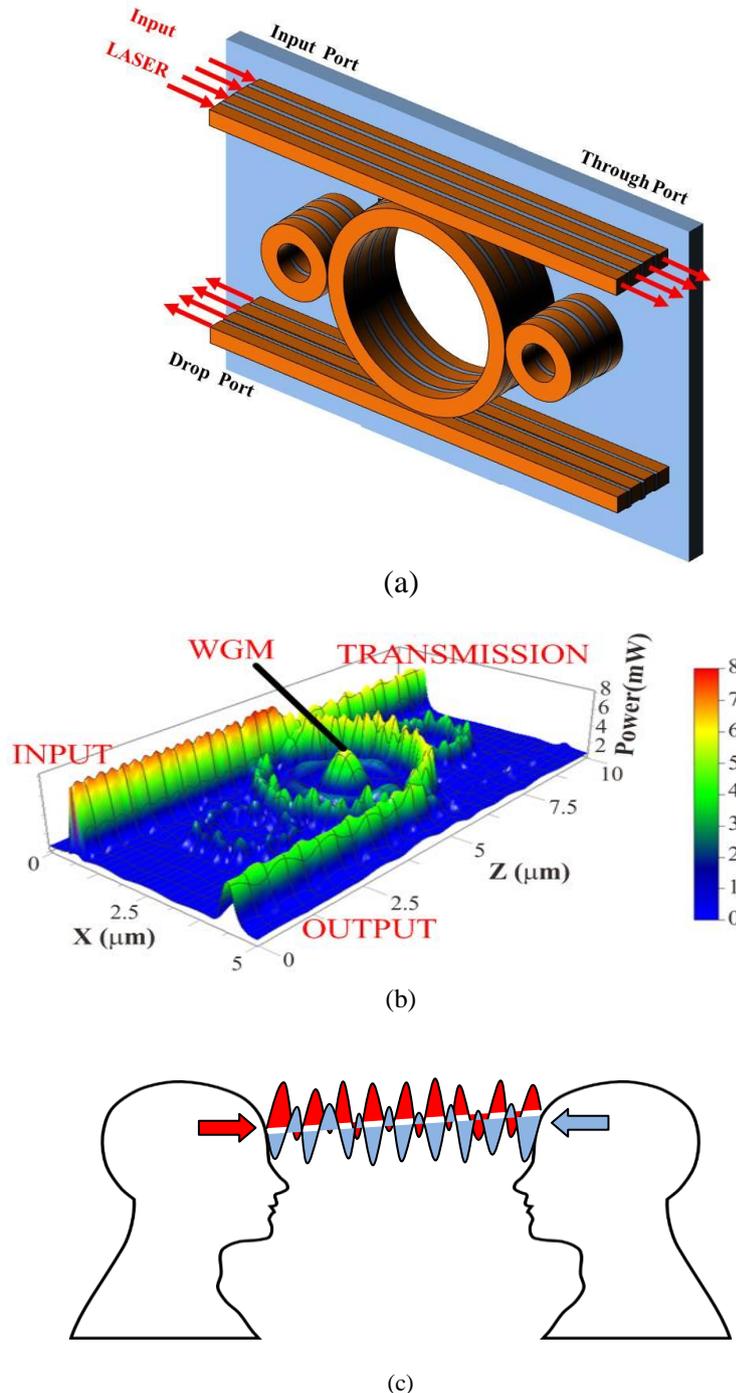


Figure 5. Schematic of transfer pulse as a telepathy pulse, where (a) a PANDA ring resonator, (b) WGM probe, (c) telepathic connection

The nonlinear microring resonator with the soliton laser pulse as input signal can be used to describe the telepathic connection as shown as Fig. 5 (a) with coupling coefficient and ring radius of 0.5 and $5\mu\text{m}$ respectively. The PANDA configuration of resonator system is able to provide nonlinear properties of the brain signal such as chaos, bifurcation, and bistability [23-25]. The brain signal projected from the system can be utilized as the expression and the brain behaviour of the human subjects by connected to the Fag network which translates it into positive and unstable brain activities. The brain activities can be presented virtually and transferred the positive and negative feelings of two subject to each other. In form of photons, the brain signal travels circularly inside the resonator circuit with 3 dimensional space and the generate WGMs in resonance condition. The pattern of the WGM's peak signal presents external brain activities which are connected to the nerves cell and acts as the probes of the telepathic connection. The upward peak of the WGMs signals illustrate the positive mind pattern of the subject which are called bright consciousness and negative mind pattern can be predicted by the decrease in the WGMs optical signals.

The optical field transmission shows the electronics conversion from the brain signal to the optical electric signal which can deliver the brain activities information for 2 ways communications of more than one person and this situation known as memory telepathy. The present work initiates the concept for development of the human communication system which proposed a possible method of a connection between a brain to another with an optical resonator circuit system. The primary objectives are to expose technology that can provide point to point communication from one brain to another, to localize unwanted sources of

telepathic communication, and to provide evidence that technologically implemented telepathy is possible. Figure 5 (c) shows the schematic sketch of transfer pulse as telepathy, where the thin film device can be used and attached on the forehead to form the connection. In applications, the use of up-down link communication and modulation can be employed via the nano-antenna [26-29], in which the WGM signals can be generated and used as the communication carriers, where the information can be modulated and demodulated by using such a system.

4. Conclusion

The telepathic connection probe by using microring resonator system is proposed for the imaging of brain activities which are interacted to another by the interpretation of the optical WGMs signal and enhanced by the brain signal which are coupled with the photonics resonator circuit. The WGM of the optical field is obtained in the middle of the ring waveguide with dimensions of $2.5\mu\text{m}$, $5.0\mu\text{m}$ (in x,z coordinate) of PANDA microring configuration. The bright signal of the WGMs is obtained with the neutral mind which represents the overlap between two minds without any external projection. The WGMs of optical signal can be used to study the paradox states of mind since it roles as the probe of the transmission signal in which the brain signal of a person affects the optical field pattern. However the interaction between minds with the pattern of the WGMs signal is still on progress of achieving the practical device due to its uncertainty loss of the states based on the Heisenberg's uncertainty principle. This work can be emerged as a research field in the development of communication technology. The concept of communication aspects for all users using the telepathic telephony is one of the very interesting techniques which can be implemented within the near future for all users. Moreover the human ad hoc network using the same principle and technique is also plausible.

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