



ISSN No. : 2321-9653

IJRASET

**International Journal for Research in Applied
Science & Engineering Technology**

IJRASET is indexed with Crossref for DOI-DOI : 10.22214

Website : www.ijraset.com, E-mail : ijraset@gmail.com

Certificate

*It is here by certified that the paper ID : IJRASET12704, entitled
Efficient Fault-Tolerant Protocol for Cognitive Radio Sensor Network using Ant
Colony Optimization*

*by
Amit N. Thakare*

*after review is found suitable and has been published in
Volume 6, Issue I, January 2018
in*

*International Journal for Research in Applied Science &
Engineering Technology*

(International Peer Reviewed and Refereed Journal)

Good luck for your future endeavors

By [Signature]

Editor in Chief, IJRASET



ISRA Journal Impact
Factor: 7.429



45.98
INDEX COPERNICUS



THOMSON REUTERS
Researcher ID: N-9681-2016



TOGETHER WE REACH THE GOAL
SJIF 7.429



ISSN No. : 2321-9653

IJRASET

**International Journal for Research in Applied
Science & Engineering Technology**

IJRASET is indexed with Crossref for DOI-DOI : 10.22214

Website : www.ijraset.com, E-mail : ijraset@gmail.com

Certificate

*It is here by certified that the paper ID : IJRASET12704, entitled
Efficient Fault-Tolerant Protocol for Cognitive Radio Sensor Network using Ant
Colony Optimization*

*by
Dr. L. G. Malik*

*after review is found suitable and has been published in
Volume 6, Issue I, January 2018
in*

*International Journal for Research in Applied Science &
Engineering Technology*

(International Peer Reviewed and Refereed Journal)

Good luck for your future endeavors



ISRA Journal Impact
Factor: 7.429



45.98
INDEX COPERNICUS



THOMSON REUTERS
Researcher ID: N-9681-2016



TOGETHER WE REACH THE GOAL
SJIF 7.429

By

Editor in Chief, IJRASET



ISSN No. : 2321-9653

IJRASET

**International Journal for Research in Applied
Science & Engineering Technology**

IJRASET is indexed with Crossref for DOI-DOI : 10.22214

Website : www.ijraset.com, E-mail : ijraset@gmail.com

Certificate

*It is here by certified that the paper ID : IJRASET12704, entitled
Efficient Fault-Tolerant Protocol for Cognitive Radio Sensor Network using Ant
Colony Optimization*

*by
Mrs. Achamma Thomas*

*after review is found suitable and has been published in
Volume 6, Issue I, January 2018
in*

*International Journal for Research in Applied Science &
Engineering Technology*

(International Peer Reviewed and Refereed Journal)

Good luck for your future endeavors

By

Editor in Chief, IJRASET



ISRA Journal Impact
Factor: 7.429



45.98
INDEX COPERNICUS



THOMSON REUTERS
Researcher ID: N-9681-2016



10.22214/IJRASET



TOGETHER WE REACH THE GOAL
SJIF 7.429