

# A Cell Biology Inspired Model for Managing Packet Broadcasts in Mobile Ad-hoc Networks

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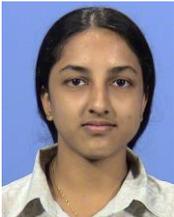
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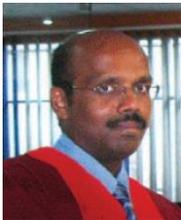
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**Abstract**—The modern computing paradigm is moving towards personal devices that incorporate wireless networking, mobility, and collaborative applications. The networking paradigm that best matches this scenario is the mobile ad-hoc network (MANET). A common instance of a MANET is the dense MANET that can be expected in any setting where large number of people congregate such as movie theatres, sports stadiums, shopping malls, transportation hubs, lobby of public offices, lecture rooms, etc. The existing packet transmission protocols for MANETs are inefficient for dense MANETs due to packet broadcast storms for stateless protocols and non-availability of anchor nodes for stateful protocols. This paper presents a new packet broadcast model developed based on cell biology and provides simulation results on protocol efficiency. As smart phone devices and collaborative applications proliferate among users, the proposed dense MANET protocol could provide real benefits to Internet enabled users and devices.

**Keyword**—Mobile ad-hoc networks, Packet broadcasts, Cellular automata.



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