

Faculty Profile of Dr. M. Balasubramaniam



Dr. M. Balasubramaniam

Professor

Department of Physics

Email: m.balou@buc.edu.in

Phone No: 0422-2428446

Mobile No: 9487021118

Research Area

- Theoretical Nuclear Physics
- Ternary Fission Studies
- Exotic Decay Studies

Education & Career

Education

Ph. D.

Subject : Physics

Institution : Department of Physics, Manonmaniam Sundaranar University

Affiliated University : Manonmaniam Sundaranar University

Year of Award : 2001

PGDCA

Subject : Computer Applications

Institution : University Department, Manonmaniam Sundaranar University

Affiliated University : Manonmaniam Sundaranar University

Year of Award : 1997

M. Sc.,

Subject: Physics

Institution : University Department, Manonmaniam Sundaranar University

Affiliated University : Manonmaniam Sundaranar University

Year of Award : 1996

B. Sc.,

Subject: Physics

Institution: Arumugam Pillai Seethai Ammal College

Affiliated University: Madurai Kamaraj University

Year of Award: 1994

Career**At Bharathiar University (Reverse Order)**

Professor: August 2018 to Till Date

Associate Professor: August 2015 to August 2018

Assistant Professor: April 2005 to August 2015

Past Experience

Young Scientist (DST-Fast Track Scheme): August 2003 to April 2005 at
Department of Physics, Manonmaniam Sundaranar University

Research Associate (CSIR Project): September 2001 to June 2003 at
Department of Physics, Panjab University, Chandigarh

Senior Research Fellow (CSIR Project): August 2000 to August 2001 at
Department of Physics, Panjab University, Chandigarh

Junior Research Fellow (DAE Project): October 1999 to August 2000 at
Department of Physics, Panjab University, Chandigarh

Junior Research Fellow (DAE Project): January 1997 to September 1999 at
Department of Physics, Manonmaniam Sundaranar University

Awards

1. Travel award to attend 2nd Asian Nuclear Reaction Database Development Workshop, held at Beijing, China during September 05 – 09, 2011 supported by DAE-BRNS, NDPCI, and Bharathiar University
2. DST-International Travel Support to present the research work at the International Symposium on Physics of Unstable Nuclei, held at Hanoi, Vietnam during November 23 – 28, 2011.

Membership

Professional Bodies

Planning Committee Member

Member: 7th five years cycle of DST - SERB schools on “Nuclear Physics”
Period: 2017 to 2021

Nominated Fellow

Member: The Academy of Sciences, Chennai
Period: Lifetime

Member

Member: Indian Association of Physics Teachers
Period: Lifetime

Member

Member: Indian Physics Association

Period: Lifetime

Visits

1. Volkswagen research fellowship (in a VW project between Giessen University, Germany and Panjab University, Chandigarh, India) at Institut für Theoretische Physik – II, Justus Liebig Universität, Giessen, Germany
Visits made during this project period
June 01-July 05, 2000, October 01-November 07, 2001, February 01-March 30, 2002, August 12-September 30, 2002.
2. Visiting Researcher at Frankfurt Institute of Advanced Studies (FIAS), Frankfurt, Germany, June 01-June 30, 2009. Presented a talk entitled “Nuclear Physics Parallels in Atomic Clusters” and developed a code to generate the shape of bouncing liquid.
3. Participated and presented a talk entitled “A comparison of ternary fragmentation potential energy surface in equatorial and collinear configuration” in the “2nd Asian Nuclear Reaction Database Development Workshop” held from 5 to 9 September 2011 organized by China Nuclear Data Centre China Institute of Atomic Energy at Beijing.
4. Participated and presented a talk entitled “Ternary fission of unstable nuclei in equatorial and collinear configuration” in the “International Symposium on Physics of Unstable Nuclei” held from 23 to 28 November 2011 organized by Nuclear Science and Technique (INST) in Hanoi and the French counterparts (GANIL and IPN Orsay) in the LIA project between CNRS and CEA of France and Ministry of Science and Technology of Vietnam held at Hanoi, Vietnam

Recent Collaborators (Last Five Years)

1. Invited Talk entitled “Mirror nuclei of $1n/2n$ halo systems as $1p/2p$ emitter Recent results supporting CCT” in the workshop “New trends in nuclear reactions and structure studies – NTNRS-19” held at University of Calicut, Kerala during December 06 – 07, 2019

Others

Reviewer / Referee in International Journals :

- i) Physics Scripts, Institute of Physics Publishing, Bristol, United Kingdom
- ii) Journal of Physics G: Nuclear and Particle Physics, Institute of Physics Publishing, Bristol, United Kingdom
- iii) European Physical Journal A – Hadrons and Nuclei, Springer
- iv) Central European Journal of Physics, Springer
- v) Nuclear Science and Engineering, American Nuclear Society

Projects

Funded Projects(National Level)

- [Ongoing - 01](#)
 - [Completed - 03](#)
-

1. DST

Title of the project: Dynamical clusterization studies of fission like fragments from the excited light nuclei

Funding Agency: Department of Science and Technology – Science and Engineering Research Council, Fast Track Scheme for Young scientists

Amount: Rs. 8.13 Lakhs

Duration: 2003-2006

2. DAE-BRNS

Title of the project: Studies on nuclear fission reaction process with orientation to nuclear data needs of India's advanced reactor program

Funding Agency: Department of Atomic Energy – Board of Research in Nuclear Sciences, under Major Research Project Scheme

Amount: Rs. 12.11 Lakhs

Duration: 2009-2013

3. UGC-MRP

Title of the project: 'A study of heavy-ion collisions in the heavy and superheavy mass region and the related phenomena'

Funding Agency: University Grants Commission, Government of India, under Major Research Project Scheme

Amount: Rs. 6.09 Lakhs

Duration: 2010-2013

1. CSIR

Title of the project : 'Dynamical clusterization studies of fission like fragments from the excited light nuclei'

Funding Agency : Department of Science and Technology – Science and Engineering

Amount : Rs. 8.13 Lakhs

Duration : 2003-2006

Consultancy Projects

- [Ongoing](#)
 - [Completed](#)
-

Research Guidance

- [Post-Doc](#)
- [Ph.D.](#)
- [M.Phil.](#)
- [M.Sc.,](#)

Ongoing-02

Ms. C. Kokila

Title of the Thesis : Fission and decay (binary, ternary) studies of actinides in a reformulated Dynamical Cluster Model and RMF approach

Date of Submission:

Date of Award:

Ms. C. Karthika

Title of the Thesis : Fission studies of $^{236}\text{U}^*$ and $^{181}\text{Re}^*$ using scission point model and exotic structure and decay studies of light to heavy nuclei

Date of Submission:

Date of Award:

Completed-06

Dr. K. Manimaran

Title of the Thesis : Ternary fission studies of californium (Cf) nuclei and heavy particle emission from ground and excited states of nuclei in transtun region

Date of Submission: 28.01.2011

Date of Award:

Dr. N. S. Rajeswari

Title of the Thesis : A study of basic and exotic decay modes of medium, heavy and superheavy nuclei

Date of Submission: 04.09.2014

Date of Award:

Dr. C. Karthikraj

Title of the Thesis : Binary, ternary fission studies of medium, heavy nuclei using dynamical and statistical model

Date of Submission: 01.04.2015

Date of Award: 21.09.2015

Dr. K. R. Vijayaraghavan

Title of the Thesis : Ternary fission studies of heavy and superheavy nucleistatistical model

Date of Submission: 16.09.2015

Date of Award: 06.05.2016

Dr. Sreeja I

Title of the Thesis : Ternary fission studies of heavy and superheavy nuclei

Date of Submission: 19.09.2019

Date of Award: 09.01.2020

M. T. Senthil Kannan

title of the Thesis: Fission studies using dynamical and statistical models

Date of Submission: 19.09.2019

Date of Award: 09.01.2020

Ongoing

Completed-18

M. T. Senthil Kannan

Title of the thesis: Mass and charge distribution of ternary fission of ^{252}Cf

and ^{236}U by statistical approach

Year of award: 2015

G. Paul Selvi

Title of the thesis: Alpha clustering of light nuclei within potential energy surface approach

Year of award: 2015

N. Nandhini

Title of the thesis: Modified Bethe-Weizacker formula applied to the study of neutron and proton halo nuclei

Year of award: 2015

R. Monisha

Title of the thesis: Basic, exotic decay modes of heavy and superheavy nuclei using Nilsson and two center shell model

Year of award: 2015

B. Banupriya

Title of the thesis: A potential energy surface study on the ternary clustering of light to medium mass nuclei

Year of award: 2015

P. Karthika

Title of the thesis: Studies on ternary fission and dripline nuclei

Year of award: 2014

V. Saranya

Title of the thesis: Ternary breakup of heavy and superheavy nuclei

Year of award: 2012

A. Nandakumar

Title of the thesis: Alpha and heavy cluster emission using Coulomb plus Woods-Saxon potential model

Year of award: 2011

N. Sangeetha

Title of the thesis: Fusion and fission cross section of $^{56}\text{Ni}^*$, $^{60}\text{Zn}^*$ and ternary potential energy surface for ^{60}Zn

Year of award: 2010

C. Karthick

Title of the thesis: Exotic decay modes of superheavy nuclei

Year of award: 2010

S. Yuvarani

Title of the thesis: Emission of fission like fragments from the excited light $^{56}\text{Ni}^*$ compound system

Year of award: 2009

V. Shanmuga Priya

Title of the thesis: A study of neutron induced ternary fission of ^{248}Cm and ^{241}Pu with emission of various light charged particles using three cluster model

Year of award: 2008

B. Saravanakumar

Title of the thesis: A study of role of halo nucleus in fusion, fission reaction and the study of cluster decay in trans-actinide and trans-tin region

Year of award: 2008

V. Jithesh

Title of the thesis: Three cluster model description with deformation and orientation degrees of freedom applied to the light charged particle accompanied fission of ^{252}Cf

Year of award: 2008

V. Vanitha Rani

Title of the thesis: A study of the role of orientation and deformation degrees of freedom in the synthesis of elements in fusion reactions

Year of award: 2007

S. Subanya

Title of the thesis: A three cluster model description applied to the study of particle accompanied ternary fission of $^{238-256}\text{Cf}$ and ^{248}Cm nuclei

Year of award: 2007

V. R. Sudha

Title of the thesis: A study of α and heavy cluster radioactivity

Year of award: 2006

B. Gugapriyadevi

Title of the thesis: De-excitation studies of hot and rotating $^{60}\text{Zn}^*$ compound system formed in $^{32}\text{S}+^{28}\text{Si}$, $^{36}\text{Ar}+^{24}\text{Mg}$, and $^{40}\text{Ca}+^{20}\text{Ne}$ reactions

Year of award: 2006

Ongoing-02

Ms. C. Chenthamizhvani**Ms. R. Preethi**

Completed-41

Arya Remjith

Title of the thesis: Nuclear fission studies using TALYS and GEF codes

Year of award: 2021

Aarthi Tagore J

Title of the thesis: Cluster and decay studies of light nuclei

Year of award: 2021

S. Vinitha

Title of the thesis: Study of exotic nuclear decay modes

Year of award: 2020

P. A. Krishna Prabha

Title of the thesis: Studies of fission mass distribution using scission point model and appearance and disappearance of magic numbers in drip line region

Year of award: 2020

C. Kuzhanthaivel

Title of the thesis: Application of mass formula for the energetics of basic decay modes

Year of award: 2019

R. Gowsalya

Title of the thesis: Fission mass distribution for the actinides using TALYS

Year of award: 2019

S. Bhuvaneswari

Title of the thesis: WKB method using realistic potential to calculate half-lives of different decay modes

Year of award: 2019

P. L. Viswanath

Title of the thesis: Fission fragment mass distribution of ^{236}U

Year of award: 2018

C. K. Sathish Kumar

Title of the thesis: Square well Vs proximity potential for the α decay and cluster decay studies

Year of award: 2018

V. Jegadeesh

Title of the thesis: ^4He , ^{10}Be , ^{14}C accompanied cold ternary fission of ^{252}Cf nuclei

Year of award: 2018

R. Balamurugan

Title of the thesis: A study of neutron star, neutron drip line and neutron halo

Year of award: 2017

P. Agalya

Title of the thesis: Cluster radioactivity

Year of award: 2017

V. S. Pavithra

Title of the thesis: Role of entrance channel and incident energy in the de-excitation of $^{60}\text{Zn}^*$

Year of award: 2015

M. Archana

Title of the thesis: Alpha decay systematics

Year of award: 2015

M. T. Senthil Kannan

Title of the thesis: Ternary fission studies of heavy nuclei using level density approach

Year of award: 2014

B. Banupriya

Title of the thesis: True ternary fission studies of thorium, uranium, plutonium, curium, californium, fermium and their isotopes

Year of award: 2014

J. Periyasamy

Title of the thesis: Alpha decay studies and empirical formula for preformation probability of cluster decay modes

Year of award: 2013

M. Janani

Title of the thesis: Ternary fission studies and binary breakup of $^{56}\text{Ni}^*$

Year of award: 2013

V. Shanmugapriya

Title of the thesis: Kinetic energy and trajectories of fragments in ternary fission of ^{252}Cf

Year of award: 2012

S. Kanaga

Title of the thesis: Potential energy surface for neutron and proton halo nuclei

Year of award: 2012

A. Jeevarekha

Title of the thesis: De-excitation study of $^{56}\text{Ni}^*$

Year of award: 2012

M. S. Sreejith

Title of the thesis: Binary and ternary fragmentation of superheavy nuclei

Year of award: 2011

V. Saranya

Title of the thesis: Kinematics and decay study of excited $^{56}\text{Ni}^*$ nuclei formed in low-energy reactions

Year of award: 2011

K. Sakthivel

Title of the thesis: Alpha decay half lives of radioactive nuclei

Year of award: 2011

S. Saikrishna

Title of the thesis: Preformation probability from penetrability integral

Year of award: 2010

S. Poongodi

Title of the thesis: Binary fragmentation potential, Q value systematics and mass distributions of $^{234,236,238}\text{U}$

Year of award: 2010

P. Nithya

Title of the thesis: Ternary potential energy surfaces for ^{56}Ni and ^{60}Zn in the equatorial and polar configuration

Year of award: 2010

M. Sreevidya

Title of the thesis: Fusion-fission studies of $^{62}\text{Ni}^*$ formed in $1n+^{61}\text{Ni}$ at various incident energies

Year of award: 2009

B. Senthilkumar

Title of the thesis: Light and heavy charged particle accompanied ternary fission of $Z = 114$ isotopes

Year of award: 2009

C. Karthikraj

Title of the thesis: The borehole logging, radiometric core assay and fortran program for Weizsacker's mass formula and its applications

Year of award: 2009

T. Jayasudha

Title of the thesis: Study of heavy cluster emission in superheavy region

Year of award: 2009

R. S. Keerthi Chandar

Title of the thesis: Fusion reactions leading to super heavy elements with atomic number $Z = 118-124$ using deformed projectile+spherical target nuclei

Year of award: 2008

K. Kavitha

Title of the thesis: Alpha accompanied ternary fission of neutron deficient to

neutron rich isotopes 242-259Fm

Year of award: 2008

T. Sudha

Entrance channel and incident energy effects in the emission of light particles and intermediate mass fragments from $^{56}\text{Ni}^*$ compound nucleus

Year of award: 2007

K. Shitha Valsan

Title of the thesis: Measurement of transit time of a ^{192}Ir HDR brachytherapy stepping source

Year of award: 2007

G. Kiruthika

Title of the thesis: Electron beam dosimetry

Year of award: 2007

V. Vanitharani

Title of the thesis: Alpha decay systematics of superheavy elements with $Z = 104$ to $Z = 120$

Year of award: 2006

X. Sidonia Valas

Title of the thesis: Comparison of point A and point H in gynaecological malignancies using HDR brachytherapy

Year of award: 2006

B. Saravanakumar

Title of the thesis: Study of light mass nuclei near neutron dripline region

Year of award: 2006

K. Manimaran

Title of the thesis: Heavy particle decay in trans-lead region

Year of award: 2006

R. Kiruthuga

Title of the thesis: Verification of dose calculation accuracy of treatment planning system with manual calculation

Year of award: 2005

Ongoing

Completed

Title

Name

Research Publication

- [International](#)
- [National](#)
- [Patents](#)
- [Conferences](#)
- [Books/Chapters](#)
- [Database](#)

Reverse Chronological Order

2021

56. [Pre-existence probability for the ternary fission of Cf isotopes](#)
C Kokila, M Balasubramaniam
Journal of Physics G: Nuclear and Particle Physics 48 (2), 025102 (2021)

2020

55. [Scission point model applied to \$^{181}\text{Re}^*\$ formed in the \$^{12}\text{C} + ^{169}\text{Tm}\$ reaction](#)
C. Karthika and M. Balasubramaniam
Eur. Phys. J. A 56, 148 (2020)
54. [Effect of channel temperature and mass window in the fission decay of](#)

[¹⁸¹Re*](#)

C. Kokila and M. Balasubramaniam
Phys. Rev. C 101, 014614 (2020)

2019-1999

53. [Mirror nuclei of \$1n/2n\$ halo systems as \$1p/2p\$ emitters](#)

C. Karthika and M. Balasubramaniam,
Phys. Rev. C 100, 054611 (2019)

52. [Role of channel temperature and mass window in the binary breakup of ²³⁶U*](#)

C. Kokila and M. Balasubramaniam
Phys. Rev. C 100, 034607 (2019)

51. [A generalized empirical formula for half-lives of alpha-decay fine structure](#)

I. Sreeja and M. Balasubramaniam
International Journal of Modern Physics E 28, 1950067 (2019)

50. [Scission point model for the mass distribution of ternary fission](#)

C. Karthika and M. Balasubramaniam,
Eur. Phys. J. A 55, 4 (2019)

49. [An empirical formula for the half-lives of exotic two-proton emission](#)

I. Sreeja and M. Balasubramaniam*
Eur. Phys. J. A 55, 33 (2019)

48. [In memory: Prof. Raj K. Gupta \(1938–2019\)](#)

M. Balasubramaniam and H. Stoecker
International Journal of Modern Physics E 28, 1977001 (2019)

47. [Equatorial, collinear trajectories in the ternary fission of ²⁵²Cf for various third fragments](#)

K R Vijayaraghavan, V Gokula Lakshmi, P Prema and M Balasubramaniam
Journal of Physics G: Nuclear and Particle Physics 46, 025103 (2019)

46. [Nuclear surface energy coefficients in cluster decay](#)

N.S. Rajeswari, C Nivetha and M. Balasubramaniam,

Eur. Phys. J A 54, 156 (2018)

45. [Dynamical model calculation to reconcile the nuclear fission lifetime from different measurement techniques](#)

M. T. Senthil Kannan, Jhilaam Sadhukhan, B. K. Agrawal, M. Balasubramaniam, and Santanu Pal,
Phys. Rev. C 98, 021601(R) (2018)

44. [An empirical formula for the half-lives of ground state and isomeric state one proton emission](#)

I. Sreeja and M. Balasubramaniam,
Eur. Phys. J A 54, 106 (2018)

43. [Preformation probability of two-proton emitters](#)

I. Sreeja, M. Balasubramaniam and Raj K Gupta,
International Journal of Modern Physics E 27, 1850032 (2018)

42. [The Three-Body Structure of 2n and 2p Halo Nuclei](#)

I. Sreeja, M. Balasubramaniam,
J Nucl. Phys. Mat. Sci. Rad. App. 5, 265 (2018)

41. [Relative mass distributions of neutron-rich thermally fissile nuclei within statistical model](#)

Bharat Kumar, M. T. Senthil Kannan, M. Balasubramaniam, B. K. Agrawal and S. K. Patra,
Phys. Rev. C 96, 034623 (2017)

40. [Charge distribution in the ternary fragmentation of \$^{252}\text{Cf}\$](#)

M. T. Senthil Kannan and M. Balasubramaniam,
Eur. Phys. J A 53, 164 (2017)
(One of the figures was selected as cover image for the August 2017 issue)

39. [Relative fragmentation in ternary systems within the temperature dependent relativistic mean-field approach](#)

M. T. Senthil Kannan, Bharat Kumar, M. Balasubramaniam, B. K. Agrawal and S. K. Patra,

Phys. Rev. C 95, 064613 (2017)

38. [Ternary fission of superheavy elements](#)

M Balasubramaniam, KR Vijayaraghavan, K Manimaran
Phys. Rev. C 93, 014601 (2016)

37. [True ternary fission](#)

KR Vijayaraghavan, M Balasubramaniam, W von Oertzen
Phys. Rev. C 91, 044616 (2015)

36. [Ternary Fission](#)

M. Balasubramaniam, K.R. Vijayaraghavan, C. Karthickraj
Pramana 85, 423 (2015)

35. [Ternary-fission mass distribution of Cf 252: A level-density approach](#)

M Balasubramaniam, C Karthikraj, S Selvaraj, N Arunachalam
Phys. Rev. C 90, 054611 (2014)

34. [A study of measured neutron elastic differential neutron cross section for \$^{23}\text{Na}\$](#)

A. Kumar, M. Balasubramaniam, A. Chakraborty, B. P. Crider, S. F. Hicks,
C.Karthikraj et al.,
J . Radioanal. Nucl. Chem. 302, 1043 (2014)

33. [Role of neck-length parameter in dynamical cluster-decay model for the decay of \$^{56}\text{Ni}^*\$](#)

C. Karthikraj and M. Balasubramaniam
J. Phys. G: Nucl. Part. Phys. 41, 095101 (2014)

32. [Collinear versus triangular geometry: A ternary fission study](#)

K. R. Vijayaraghavan, M. Balasubramaniam, and W. von Oertzen
Phys. Rev. C 90, 024601 (2014)

31. [Exotic decay modes of odd-Z\(105-119\) superheavy nuclei](#)

N. S. Rajeswari and M. Balasubramaniam
Eur. Phys. J. A 50, 105 (2014)

30. [An empirical relation for cluster decay preformation probability](#)
M. Balasubramaniam and N. S. Rajeswari
International Journal of Modern Physics E 23, 1450018 (2014)
29. [Decay studies of \$^{59}\text{Cu}^*\$ formed in the \$^{35}\text{Cl} + ^{24}\text{Mg}\$ reaction using the dynamical cluster-decay model](#)
C. Karthickraj and M. Balasubramaniam
Phys. Rev. C 87, 024608 (2013)
28. [Alpha accompanied ternary fission of superheavy nuclei](#)
S. Thakur, R. Kumar, K.R. Vijayaraghavan and M. Balasubramaniam
International Journal of Modern Physics E 22, 1350014 (2013)
27. [Nuclear surface energy coefficients in \$\alpha\$ -decay](#)
N.S. Rajeswari and M. Balasubramaniam
J. Phys. G: Nucl. Part. Phys. 40, 035104 (2013)
26. [Temperature-dependent binding energies in a dynamical cluster-decay model applied to the decay of hot and rotating \$^{56}\text{Ni}^*\$](#)
C. Karthickraj, N. S. Rajeswari, and M. Balasubramaniam
Phys. Rev. C 86, 014613 (2012)
25. [Kinetic energies of cluster fragments in ternary fission of \$^{252}\text{Cf}\$](#)
K. Vijayaraghavan, W. von Oertzen and M. Balasubramaniam
Eur. Phys. J. A 48, 27 (2012)
24. [Cluster pre-existence probability](#)
N.S. Rajeswari, K. Vijayaraghavan and M. Balasubramaniam
Eur. Phys. J. A 47, 126 (2011)
23. [All possible ternary fragmentation of \$^{252}\text{Cf}\$ in collinear configuration](#)
K. Manimaran and M. Balasubramaniam
Phys. Rev. C 83, 034609 (2011)
22. [Ternary fission fragmentation of \$^{252}\text{Cf}\$ for all possible third fragments](#)
K. Manimaran and M. Balasubramaniam

21. [Deformation and orientation effects in the ternary fragmentation potential of the \$^4\text{He}\$ - and \$^{10}\text{Be}\$ -accompanied fission of the \$^{252}\text{Cf}\$ nucleus](#)

K. Manimaran and M. Balasubramaniam

J. Phys. G: Nucl. Part. Phys. 37 045104 (2010)

20. [Cluster radioactivity in trans-tin region using semi-empirical formula](#)

K. Manimaran and M. Balasubramaniam

Int. J. Mod. Phys. E 18, 1509 (2009)

19. [Three cluster model for the alpha-accompanied fission of Californium nuclei](#)

K. Manimaran and M. Balasubramaniam

Phys. Rev. C 79, 024610 (2009)

18. [Magic numbers in exotic light-nuclei near drip-lines](#)

R.K. Gupta, M. Balasubramaniam, S. Kumar, S.K. Patra, G. Munzenberg and W. Greiner,

J. Phys. G: Nucl. Part. Phys. 32, 565 (2006)

17. [The dynamical cluster-decay model of preformed clusters for a hot and rotating \$^{116}\text{Ba}^*\$ nucleus produced in the low-energy \$^{58}\text{Ni}+^{58}\text{Ni}\$ reaction](#)

R.K. Gupta, M. Balasubramaniam, R. Kumar, D. Singh, S.K. Arun and W. Greiner,

J. Phys. G: Nucl. Part. Phys. 32, 345 (2006)

16. [Optimum orientations of deformed nuclei for cold synthesis of superheavy elements and the role of higher multipole deformations](#)

R.K. Gupta, M. Balasubramaniam, R. Kumar, N. Singh, M. Manhas, and W. Greiner,

J. Phys. G: Nucl. Part. Phys. 31, 631 (2005)

15. [Proton and alpha-radioactivity of spherical proton emitters](#)

M. Balasubramaniam and N. Arunachalam
Phys. Rev. C 71, 014603 (2005)

14. [Dynamical cluster-decay model for hot and rotating light-mass nuclear systems applied to low-energy \$^{32}\text{S}+^{24}\text{Mg}\rightarrow^{56}\text{Ni}^*\$ reaction](#)

R.K. Gupta, M. Balasubramaniam, R. Kumar, D. Singh, C. Beck, and W. Greiner,
Phys. Rev. C 71, 014601 (2005)

13. [New semi-empirical formula for exotic cluster decay](#)

M. Balasubramaniam, S. Kumarasamy, N. Arunachalam and R.K. Gupta,
Phys. Rev. C 70, 017301 (2004)

12. [Collective clusterization effects in light heavy ion reactions](#)

R.K. Gupta, M. Balasubramaniam, R. Kumar, D. Singh and C. Beck,
Nucl. Phys. A 738, 479 (2004)

11. [Emission of intermediate mass fragments from hot \$^{116}\text{Ba}^*\$ formed in low-energy \$^{58}\text{Ni}+^{58}\text{Ni}\$ reaction](#)

M. Balasubramaniam, R. Kumar, R.K. Gupta, C. Beck and W. Scheid,
J. Phys. G: Nucl. Part. Phys. 29, 2703 (2003)

10. [Closed-shell effects from the stability and instability of nuclei against cluster decays in the mass regions 130-158 and 180-198](#)

R.K. Gupta, S. Dhaut, R. Kumar, M. Balasubramaniam, G. Munzenberg and W. Scheid,
Phys. Rev. C 68, 034321 (2003)

09. [Cluster-decay of hot \$^{56}\text{Ni}^*\$ formed in \$^{32}\text{S}+^{24}\text{Mg}\$ reaction](#)

R.K. Gupta, R. Kumar, N.K. Dhiman, M. Balasubramaniam, W. Scheid and C. Beck,
Phys. Rev. C 68, 014610 (2003)

08. [The formation and decay of superheavy nuclei produced in \$^{48}\text{Ca}\$ -induced reactions](#)

S. Kumar, M. Balasubramaniam, R.K. Gupta, G. Munzenberg and W. Scheid,

J. Phys. G: Nucl. Part. Phys. 29, 625 (2003)

07. [Structure effects in the region of superheavy elements via the \$\alpha\$ -decay chain of \$^{293}_{118}\$](#)

R.K. Gupta, S. Kumar, R. Kumar, M. Balasubramaniam, and W. Scheid
J. Phys. G: Nucl. Part. Phys. 28, 2875 (2002)

06. [The cluster-core model for halo-structure of light nuclei at the drip lines](#)

R.K. Gupta, S. Kumar, M. Balasubramaniam, G. Munzenberg, and W. Scheid
J. Phys. G: Nucl. Part. Phys. 28, 699 (2002)

05. [Decay of excited \$^{116}\text{Ba}^*\$ formed in \$^{58}\text{Ni}+^{58}\text{Ni}\$ reaction via the emission of intermediate mass fragments](#)

R.K. Gupta, M. Balasubramaniam, C. Mazzocchi, M. La Commara and W. Scheid
Phys. Rev. C 65, 024601 (2002)

04. [Cold \$^{86}\text{Kr}\$ valley in superheavy \$Z=104-120\$ nuclei](#)

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