

Curriculum Vitae of Dr. R.C. Patel

A. Name: Dr. R.C. Patel

B. Date of Birth: 2nd March, 1963

C. Designation & Organization: **Professor, Department of Geology,
Institute of Science, Banaras Hindu University
(BHU), Varanasi-221 005, India**

D. Candidate's field of specialization: **Structural Geology and Thermochronology,
Himalayan Tectonics, landslide studies**

E. Whether belongs to SC/ST: N.A.

F. Academic Qualifications (Bachelor's Degree onwards):

Also mention title of the Ph D thesis and name of guide

S. No.	Year	Degree	Subjects	Institution/ College	University	Additional Particulars/ Rank/Comments, if any
1.	1983	B.Sc. (Hons)	Geology, Physics, Chem.	Govt. College, Sundargarh, Odisha	Sambalpur University, Odisha	-
2.	1986	M.Sc.	Applied Geology	University of Roorkee, Roorkee (Presently IIT Roorkee)	University of Roorkee, Roorkee (Presently IIT Roorkee)	-
3.	1993	Ph.D.	Earth Sciences	University of Roorkee, Roorkee (Presently IIT Roorkee)	University of Roorkee, Roorkee (Presently IIT Roorkee)	<i>Highly appreciated by foreign examiner (M.E., Brookfield, Canada.)</i>

Title of Ph.D. “**Structural Geometry and Strain Patterns of the Collision Zone, Zaskar, NW-Himalaya**”

Name of Guide: **Prof. A.K. Jain**

G. Positions held earlier (in chronological order)

S. No.	From	To	Designation	Employee Details	Additional Information/ Comments, if any
1.	Nov., 1992	Sept., 1993	Research Associate	Wadia Institute of Himalayan Geology, Dehradun	
2.	Sept., 1993	Oct., 1994	Research Scientist/ Principal Investigator	Wadia Institute of Himalayan Geology, Dehradun	Working in Young Scientist Project awarded by DST, Govt. of India
3.	18 th Oct., 1994	17 th Oct., 2003	Lecturer	Department of Geophysics, Kurukshetra University, Kurukshetra	
4.	18 th Oct., 2003	17 th Oct., 2006	Reader	Department of Geophysics, Kurukshetra University, Kurukshetra	
5.	18 th Oct., 2006	17 th Oct., 2009	Associate Professor	Department of Geophysics, Kurukshetra University, Kurukshetra	
6.	18 th Oct., 2009	10 th Dec., 2020	Professor	Department of Geophysics, Kurukshetra University, Kurukshetra	
7.	11 th Dec., 2020	Continuing	Professor	Department of Geology, Institute of Science, Banaras Hindu University (BHU), Varanasi	

H. Awards/Prizes/Certificates:

1. Junior Research Fellow in UGC Project (1987-1990) at University of Roorkee, Roorkee.
2. Research Assistant in DST Project (1990-1991) at University of Roorkee, Roorkee.
3. Research Associate in DOD Project (1992-1993) at Wadia Institute of Himalayan Geology (WIHG), Dehradun.
4. Scientist in SYS Programme of DST (1993-1994) at Wadia Institute of Himalayan Geology, Dehradun

5. Khosala Annual Research Award 1994 and a Medal of University of Roorkee, Roorkee (At present, it is IIT, Roorkee)
6. Commonwealth Academic Staff Fellowship-2005 at University College London by Commonwealth Scholarship Commission in the United Kingdom.

I. Reviewer of Research Papers/ Research Projects:

- Journal of Himalayan Geology, WIHG, Dehradun
- DST Research Project
- Tectonophysics
- Journal of Asian Earth Sciences
- Journal of Earth System Science (INSA)
- Geological Society of India

J. National Level Positions:

- Member of executive committee of Haryana State Council for Science & Technology, Department of Science & Technology, Govt. of Haryana

K. Membership of Professional Societies:

- Life Member Geological Society of India, Bangalore
- Life Member Indian Geological Congress, Roorkee
- Life Member of Indian Geophysical Union, Hyderabad
- Life Member of Journal of Himalayan Geology, WIHG, Dehradun
- Life Member of Commonwealth Commission, U.K.
- Member of Kurukshetra University Teacher Association (KUTA)
- Member of on track forum, international thermochronology community
- Life Member of the Indian Science Congress Association, Kolkotta

L. Publications

a) Article/Paper

Chronological list of all publications (indicate which are in refereed publications and which are not): b) * Complete list of publications in standard refereed journals:

Total Publications: **49**,

International Journals: **28**, National Journals/magazines: **17**

Book Chapters: **02**, Online international reports: 0, Research Bulletin: **02**

Sl. No.	Year	Article Name	Author	Published in	URL of the publication	I.F.
<i>Papers in International Journals: 28</i>						
28	2020	Tectonic Control on exhumation and seismicity in the Garhwal-Kumaun	Patel, R.C., Mohan, M., Karnwal, R. and Kumar, R.	Terra Nova v. 32, pp. 23-33	doi:10.1111/ ter.12432	2.436

		Himalaya, NW-India.				
27	2020	Mio-Pliocene Tectonics and Exhumation Histories of the NW- and NE-Himalayas	Patel, R.C. and Manmohan	Episodes , v.43/1, pp: 381-403	doi.org/10.18814/epiug s/2020/020019	1.614
26.	2019	Assessment of coral reef thermal stress over India based on Remotely sensed Sea Surface Temperature	Arora , M., Gujrati, A., Ray Chaudhary, N., Chauhan, P. and Patel, R.C.	Geocarto International	https://doi.org/10.1080/10106049.2019.1624983	1.646
25.	2019	U-Pb zircon ages and Sm-Nd isotopic characteristics of the Lesser and Great Himalayan sequences, Uttarakhand Himalaya, and their regional tectonic implications	Mukherjee. P.K., Jain, A.K., Singhal, S., Singha, N.B., Singh, S., Kumud, K., Seth, P. and Patel, R.C.	Gondawana Research	doi.org/10.1016/j.gr.2019.06.001. Vol. 75 pp. 282–297	6.959
24.	2019	Structural and Thermochronological studies of the Almora Klippe, Kumaun, NW-India: Implications for Crustal Thickening and Exhumation of the NW-Himalaya	Puniya, M.K., Patel, R.C. and Pant, P. D.	Jour. Geol. Soc., London , Spec. Publication, SHARMA, R., VILLA, I.M.&KUMAR, S. (eds) 2019. Crustal Architecture and Evolution of the Himalaya–Karakoram–Tibet Orogen. Geological Society, London, Special Publications, 481, 81–110.	doi.org/10.1144/SP481-2017-74	3.037
23.	2019	Tectonic control over exhumation in the Arunachal Himalaya: New constraints from Apatite Fission Track Analysis	Adlakha, V., Patel, R. C. , Kumar, A. and Lal, N.	Jour. Geol. Soc., London , Spec. Publication, SHARMA, R., VILLA, I.M.&KUMAR, S. (eds) 2019.	doi.org/10.1144/SP481.1.	3.037

				Crustal Architecture and Evolution of the Himalaya–Karakoram–Tibet Orogen. Geological Society, London, Special Publications, 481, 65–79.		
22.	2019	Strike-slip faults in an intraplate setting and their significance for landform evolution in the Kachchh peninsula, Western India	Bhattacharya, F, Chauhan, G., Prasad, A.D., Patel, R.C. and , Thakkar, M.G.	Geomorphology , 328 pp. 118-137	doi.org/10.1016/j.geomorph.2018.12.006	2.958
21.	2018	Benthic coverage and bottom topography of coral reef environment over Pirotan reef, Gulf of Kachchh region, India	Arora, M., Gujrati, A., Ray Chaudhury, N. and Patel, R.C.	Geocarto International	doi: 10.1080/10106049.2018.1469678	1.646
20.	2017	Sedimentology, geochemistry and OSL dating of the alluvial succession in the northern Gujrat alluvial plain (western India) – A record to evaluate the sensitivity of a semiarid fluvial system to the climate and tectonic forcing since the late Marine Isotope Stage 3	Bhattacharya, F., Shukla, A.D., Patel, R.C. , Rastogi, B.K. and Juyal, N.	Geomorphology , 297 pp. 1–19	https://doi: 10.1016/j.geomorph.2017.08.046	2.958
19.	2017	Slope stability analysis of Balia Nala landslide, Kumaun Lesser Himalaya, Nainital, Uttarakhand, India	Kumar, M., Rana, S., Pant, P.D. and Patel, R.C.	Journal of Rock Mechanics and Geotechnical Engineering , v. 9, pp. 150-158.	https://doi.org/10.1016/j.jrmge.2016.05.009	1.881
18.	2016	Post-emplacement kinematics and exhumation history of	Singh, P. and Patel, R.C.	Int. J. Earth Sci. (Geol Rundsch) ,	10.1007/s00531-016-1422-0.	2.283

		the Almora klippe of the Kumaun–Garhwal Himalaya, NW India: revealed by fission track thermochronology.		Vol.: 106/6, pp. 2189-2202		
17.	2015	Thrusting and back-thrusting as post emplacement kinematics of the Almora klippe: Insights from Low-temperature thermochronology,	Patel, R.C. , Singh, P. and Lal, N.	Tectonophysics , v. 653, pp. 41-51	doi: 10.1016/j.tecto.2015.03.025.	2.693
16.	2015	Spatial prediction of landslide susceptibility in parts of Garhwal Himalaya, India using the Weight of Evidence modeling,	Guri, P.K., Champati ray, P.K. and Patel, R.C.	Environmental Monitoring and Assessment	link.springer.com/article/10.1007/s10661-015-4535-1	1.687
15.	2014	Fluvial landforms and their implication towards understanding the past climate and seismicity in the northern Katrol Hill Range, western India	Bhattacharya, F., Rastogi, B.K., Thakkar, M.G., Patel, R.C. and Juyal, N.	Quaternary International , Vol. 333, 49- 61	https://doi.org/10.1016/j.quaint.2014.03.002	2.199
14.	2013	Early Oligocene paleosols of the Dagshai Formation, India: A record of the oldest tropical weathering in the Himalayan foreland.	Srivastava, P., Patel, S., Singh, N., Jamir, T., Kumar, N., Aruche, M. and Patel, R.C.	Sedimentary Geology , Vol. 294, pp. 142–156	doi.org/10.1016/j.sedgeo.2013.05.011.	2.373
13.	2013	Late Quaternary climate and seismicity in the Katrol hill range, Kachchh, Western India	Bhattacharya, F., Rastogi, B.K., Ngangom, M., Thakkar, M.G. and Patel, R.C.	Journal of Asian Earth Sciences , Vol. 73, pp. 114–120	https://doi.org/10.1016/j.jseaes.2013.04.030	2.335
12.	2013	Rapid long-term erosion in the rain shadow of the Shillong Plateau, Eastern Himalaya	Adlakha, V., Lang, K.A., Patel, R.C. , Lal, N. and Huntington, K. W.	Tectonophysics , v. 582, pp.76–83	https://doi.org/10.1016/j.tecto.2012.09.022	2.693
11.	2012	Plio-Pleistocene in-sequence thrust	Singh, P., Patel, R.C. and Lal,	Tectonophysics , v. 574–575,	https://doi.org/10.1016/j	2.693

		propagation along the Main Central Thrust zone (Kumaon-Garhwal Himalaya, India): New thermochronological data	N.	pp. 193–203	.tecto.2012.08.015	
10.	2011	Spatiotemporal variation in exhumation of the Crystallines in the NW-Himalaya, India: Constraints from Fission Track dating analysis,	Patel, R.C., Adlakha, V., Lal, N., Singh, P. and Kumar, Y	Tectonophysics , v. 504, pp. 1–13	https://doi.org/10.1016/j.tecto.2010.11.011	2.693
9.	2009	Exhumation history of the Higher Himalayan Crystalline along Dhauliganga-Goriganga river valleys, NW India: New constraints from fission track analysis.	Patel, R. C., and A. Carter	Tectonics , 28, TC3004,	http://online.library.wiley.com/doi/10.1029/2008TC002373/full	3.784
8.	2009	Denudation history of South China Block and Sediment supply to Northern margin of the South China sea	Yi, Y., Xiaoqiong, H., Ge, L., Bin, X., Xiaoyong, L. and Patel, R.C.	Journal of Earth Science , v.. 20/1, pp. 57-65	https://link.springer.com/article/10.1007/s12583-009-0006-3	0.975
7.	2007	Deterministic approach for preparation of seismic hazard map for NE India.	Joshi, A., Mohan, K. & Patel R.C.	Natural Hazards , pp129 – 146	https://link.springer.com/article/10.1007/s11069-007-9112-7	1.833
6.	2007	Thermotectonic history of the Chiplakot Crystalline Belt in the Lesser Himalaya, Kumaon, India: Constraints from apatite fission-track thermochronology	Patel, R.C., Kumar, Y., Lal, N. & Kumar, A	Journal of Asian Earth Sciences . v. 29/2-3, pp. 430-439	https://doi.org/10.1016/j.jseaes.2006.04.008	2.335
5.	2006	Late-to-post collisional brittle-ductile deformation in the Himalayan orogen: Evidences from structural studies in the Lesser Himalayan Crystallines,, Kumaon Himalaya, India.	Patel, R.C. & Kumar, Y.	Journal of Asian Earth Sciences . v. 27, pp. 735-750	https://doi.org/10.1016/j.jseaes.2005.06.010	2.335

4.	2003	Geomorphological study of Quaternary Tectonics of the Doon Valley, Garhwal Himalaya, Uttaranchal.	Patel, R.C. & Kumar, Y.	Journal of Nepal Geological Society , v. 28, pp. 121-132.	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=fLDT7UIAAAAJ&citation_for_view=fLDT7UIAAAAJ:f2IySw72cVMC	
3.	1999	Structure of the Higher Himalayan Crystallines along the Suru-Doda Valleys (Zaskar), NW-Himalaya	Jain, A.K. and Patel, R.C.	In: Geodynamics of the NW-Himalaya (eds. Jain, A.K. and Manickvasagam, R.M.). Gondwana Research Group Memoir 6, Gondwana Research Group , Japan. pp.91-110	https://scholar.google.com/scholar?cluster=12465630470842920866&hl=en&oi=scholar	6.959
2.	1997	Modelling of active lineaments for predicting a possible earthquake scenario around Dehradun, Garhwal Himalaya, and India.	Joshi, A. and Patel, R.C.	Tectonophysics , v. 283/4, pp.289-310.	http://www.sciencedirect.com/science/article/pii/S0040195197001492?via%3Dihub	2.693
1.	1993	Extensional tectonics in the Himalayan Orogen, Zaskar, NW Himalaya.	Patel, R.C. , Singh, S., Asokan, A., Manickavasagam, R.M. and Jain, A.K.	Jour. Geol. Soc., London , Spec. Publication, Himalayan Tectonics (Treloar, P.J. & Searle, M.P., Eds), No.74, pp.445-459.	http://sp.lyellcollection.org/content/74/1/445.short	3.037
<i>Papers in National Journals/Megazines:17</i>						
17	2020	Tectonics of the	Jain, A.K.	Proc Indian	DOI:	0.23

		Western, Sikkim and Arunachal Himalaya	Thakur, V.C., Joshi, M. Mukherjee, P.K., Patel, R.C. , Bhattacharyya, K., Singhal, S., Agarwal, K.K., Dixit, R., Deshmukh, G. and Manmohan	Natn Sci Acad V. 86 No. 1 pp. 189-212	10.16943/pti nsa/2020/49781	
16.	2019	Bleaching stress on Indian coral reef regions during mass coral bleaching years using NOAA OISST data	Arora , M., Ray Chaudhary, N., Gujrati, A., and Patel, R.C.	Current Science , V. 117, No. 2, pp. 242 -250	doi: 10.18520/cs /v117/i2/242-250 Vol: 117/2, pp. 242-250	0.756
15.	2019	Susceptibility status of landslides in Yamuna valley, Uttrakhand, NW-Himalaya, India	Kundu, V. and Patel R.C.	Himalayan Geology , v. 40 (1), pp. 30 -49	ISSN: 0971-8966	0.41
14.	2019	Characteristics of the palynomorphs and hydrocarbon potential in the continental Permian Raniganj Formation, Banespitali Nala, West Bengal	Sinha, H.N., Patel, R.C. and Bhaiya Anupam, K.	Journal of Geological Society of India , v: 93, pp.431-436	10.1007/s12594-019-1197-6	0.632
13.	2016	Tectonics and Evolution of the Himalaya	Jain, A.K., Dasgupta, S., Bhargava, O.N., Israil, M.D., Jayangonda perumal, R., Patel, R.C. , Mukul, M., Parcha, S.K., Adlakha, V., Agarwal, K.K., Singh, P., Bhattacharyya, K., Pant, N.C. and Banerjee, D.M.,	Proc Indian Natn Sci Acad 82 No. 3, Spl Issue, pp. 581-604.	DOI: 10.16943/pti nsa/2016/48469.	0.23
12.	2014	Basin Provenance and	Patel, R.C. ,	Journal of	10.1007/s1	

		Post-Depositional Thermal History along the Continental P/T Boundary of the Raniganj Basin, Eastern India: Constraints from Apatite Fission Track Dating	Sinha, H. N., Bhaiya Anupam, K. and Singh, P.	Geological Society of India , v: 83, pp. 403-413.	2594-014-0057-7	
11.	2013	Tectonics and climate interplay: exhumation patterns of the Dhauladhar Range, NW Himalaya	Adlakha, V., Patel, R. C. , Lal, N., Mehta, Y. P., Jain A. K. and Kumar, A.,	Current Science Vol. 104, No. 11, pp.1551-1559		
10.	2013	Exhumation and its mechanisms: a Review of Exhumation studies in the Himalaya	Adlakha, V., Patel, R. C. and Lal, N.	Journal of Geological Society of India , v..81, pp.481-502	0.1007/s12594-013-0064-0	
9.	2012	Evolution of the Himalaya,	Jain, A.K., Ahmad, T., Singh, S., Ghosh, S.K., Patel, R. C., Kumar, R., Agarwal K. K., Perumal, J., Islam R. and Bhargava, O. N.,	Proc Indian natn Sci Aca , Vol. 78 No. 3, pp. 259-275.		
8.	2011	Geology, Structural and Exhumation history of the Higher Himalayan Crystallines in Kumaon Himalaya, India	Patel, R.C. , Adlakha, V., Singh, P., Kumar, Y. and Lal, N.	Journal of Geological Society of India , v.77, pp. 47-72	10.1007/s12594-011-0008-5	
7.	2011	Exhumation and thermal history of the Shillong: Constraints from Apatite Fission Track analysis	Adlakha, V., Patel, R.C. and Lal, N.	Memoir of the Geological Society of India , Bangalore (Edited by Tiwari, R.P.), Geological Society of India	https://scholar.google.com/citations?view_op=view_citation&hl=en&user=fLDT7UIAAAAJ&start=20&citation_for_view=fLDT7UIAAAAJ:	

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6.	2008	The assessment of seismic hazard in two seismically active regions in Himalayas using deterministic approach.	Mohan, K, Joshi, A., and Patel R.C.	Journal of Indian Geophysical Union , v. 12/3, pp. 97-107.	http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.53.3.2064&rep=rep1&type=pdf	
5.	2007	Quantitative analysis of b-value in the NE part of Indian subcontinent.	Mohan, K, Joshi, A., and Patel, R.C.	13 th symposium on earthquack engineering (13SEE) held on 18-20, 2006 at IIT Roorkee. (2007), pp. 352-358		
4.	2006	Strong motion impact of large earthquakes in the seismic zonation of NE part of India.	Joshi, A., Mohan, K. and Patel R.C.	Proceedings of 6th International Conference and exposition sponsored by Society of Exploration Geophysicists (SPG) held in Kolkatta from 9-11, January, 2006, pp. 1034-1038.		
3.	2004	Deformation mechanisms in the Chiplakot Crystalline Belt CCB) along Kali-Gori valleys (Kumaon), NW-Himalaya.	Kumar, Y. and Patel, R.C.	Journal of Geological Society of India.	v. 64, pp. 76-91	
2.	2000	Hydro-geomorphological studies of the Markanda basin, Haryana (India)	Patel, R.C. and Thakur, S.K.	Journal of Applied Hydrology,	v. XIII, Nos.3&4, pp.20-29.	
1.	1994	Strain pattern of the Shergol Ophiolite Melange of the Indus Suture Zone, Ladakh	Patel, R.C. and Jain A.K.,	Jour. Him. Geol.,	Vol. 5(2), pp.133-145	

b. Books/Chapters in Books - chronological list: 02

Sl. No.	Year	Article Name	Author	Published in	Edited By	ISBN No & Pages
2.	2009	Deformation and structural analysis of the Higher Himalayan Crystallines along Goriganga valley, Kumaon, NW-Himalaya, India	Patel, R.C. & Kumar, Y.	Magmatism, Tectonism and Mineralisation (MTM) , Macmillan Publishers India Ltd., New Delhi, India	Kumar, S.	978-0230-63861-7 & pp. 146–166
1.	1997	Deformation and strain patterns of the Panjal Traps in the Tethyan Sedimentary Zone, Zaskar, NW-Himalaya	Patel, R.C. & Jain, A.K.	Geodynamic domains in Alpine-Himalayan Tethyas , A Publication of IGCP Project 276. Oxford and IBH Publishing Co. Pvt Ltd., New Delhi, Calcutta	Sinha, A.K., Sassi, F.P. & Papanikolaou, D.	81-204-1091-2 & pp. 69-100

c. Technical Reports/ Newspapers/Review:06 – chronological list: 06

S.No.	Name of Authors	Title of report/review/article	Name of Reports/News papers, Vol., Year and Page
6.	Patel, R.C.	Exhumation of the Lesser Himalaya, Garhwal-Kumaon region, NW-India: constrained by fission track analysis.	Project Report No.: SR/S4/ES-341/2008
5.	Joshi, A., Mohan, K. and Patel R.C.	Seismic zonation technique based on deterministic approach: North East India	Seismology Update Department of Science and Technology, Govt. of India, 2006, v. 3/2 , pp.6.
4.	Patel R.C.	Exhumation of the Higher Himalayan Crystallines (HHC), Arunachal Himalaya, using Fission Track Thermochronology	Project Report No.: ESS/16/242/2005/Kemang/03,
3.	Kumar, D, Jain, A.K., Patel, R.C. and Lal, N.,	Exhumation of the Himalayan metamorphic belt (HMB): Role of crustal-scale folds as revealed from fission track ages.	Deep continental studies in India Newsletter, Department of Science and Technology, Govt. of India, 2003, v. 13, No.1. pp.18-

			20.
2.	Patel R.C. and Thakur, A.	Deformation and extensional tectonics of the Higher Himalayan Crystalline (HHC) along Kali valley, Kumaon Himalaya, Uttranchal	Project Report No. ESS/CA/A9-52/97, 80p.
1.	Patel R.C.	Extensional tectonics of the Higher Himalayan Crystalline belt, H.P.	Project Report: SR/SY/A-05/92, 61p.

Research Papers Presented in Conferences/Workshops:

Patel, R.C., (2019), Deformation Mechanism in the Almora crystalline klippe and Ramgarh thrust sheet during emplacement: A study from Eastern Kumaon, NW-Himalaya. AGU Fall Meeting 2019, Moscon Center, San Francisco, USA.

Patel, R.C., Puniya, M.K. and Pant, P.D., (2018), Emplacement Kinematics and post-emplacement Exhumation process of the Almora klippe & Ramgarh Thrust sheet: Insights from structural and thermochronological studies. 5th Conference and workshop on Rock Deformation and Structures (RDS-V), 4th to 6th October, 2018 Department of Geology, University of Delhi, North Campus, 34, Chhatra Marg, Delhi-110007 pp.

Man Mohan and **Patel, R.C.**, (2018), Detrital Zircon and apatite grains fission track dating approach for exhumation history of provenance of Himalayan foreland basin in Himachal Pradesh, NW-Himalaya. 5th Conference and workshop on Rock Deformation and Structures (RDS-V), 4th to 6th October, 2018 Department of Geology, University of Delhi, North Campus, 34, Chhatra Marg, Delhi-110007, pp. 16-17

Gahlaut, P., **Patel, R.C.** and Nainwal, D.C., (2018), Morphotectonic analysis-based assessment of relative tectonic activity in Yamuna valley, Garhwal Himalaya, Uttarakhand. 5th Conference and workshop on Rock Deformation and Structures (RDS-V), 4th to 6th October, 2018 Department of Geology, University of Delhi, North Campus, 34, Chhatra Marg, Delhi-110007, pp. 18.

Patel, R.C., Karnwal, R. and Sundriyal, Y. P., (2018), A review of the exhumation and seismicity in the Garhwal – Kumaon region, NW-Himalaya, India: To understand feedback relationship between exhumation and tectonics in the Himalaya. National Seminar on “Dynamics of surface & sub-surface geological processes” Organised by department of Earth Sciences, Pondyicherry University, Puducherry, 8th to 9th February, 2018, pp. 22-23.

- Patel R.C.**, (2017), Feedback relationship between exhumation and tectonics in the Himalaya: Thermochronological and seismicity study from the Garhwal-Kumaon Himalaya, NW-India. National Seminar on “Recent researches in Earth Sciences from interior of the Earth to space Geosciences”, Organised by Department of Geology, Govt. College, Sundargarh, Odisha, 22nd to 23rd, December, 2017.
- Adlakha, V. Kumar, A., **Patel, R.C.** and Lal, N., (2015), Tectonic and topographic control over erosion in the Arunachal Himalaya. 30th Himalayan-Karakoram-Tibet Workshop, 2015, Wadia Institute of Himalayan Geology (WIHG), Dehradun, 6th to 8th October, 2015, pp. 44-45.
- Patel, R.C.**, Kumar, M., Singh, P., and Kumar, A., (2015), Tectonic and exhumational variability between the Higher and Lesser Himalayan Crystallines, Kumaon-Garhwal region, NW-Himalaya, India, 30th Himalayan-Karakoram-Tibet Workshop, 2015, Wadia Institute of Himalayan Geology (WIHG), Dehradun, 6th to 8th October, 2015, pp. 128-129.
- Kumar, M., Pant, P.D., and **Patel, R.C.**, (2015), Deformation pattern of Almora klippe south-eastern Kumaon Lesser Himalaya, Uttarakhand, India. 30th Himalayan-Karakoram-Tibet Workshop, 2015, Wadia Institute of Himalayan Geology (WIHG), Dehradun, 6th to 8th October, 2015, pp. 141-142.
- Kumar, A., Adlakha, V., Vinaya, **Patel, R.C.**, (2015), Influence of Himalayan tectonics on uplift and exhumation of the Shillong Plateau and Mikir Massifs: New constraints from Apatite Fission Track Analysis. 30th Himalayan-Karakoram-Tibet Workshop, 2015, Wadia Institute of Himalayan Geology (WIHG), Dehradun, 6th to 8th October, 2015, pp. 152-153.
- Singh, S. and **Patel, R.C.**, (2015), Formation of the Main Boundary Thrust (MBT) and its role in exhumation of the Amritpur granite in Kumaon Himalaya, NW-India. 30th Himalayan-Karakoram-Tibet Workshop, 2015, Wadia Institute of Himalayan Geology (WIHG), Dehradun, 6th to 8th October, 2015, pp. 243-244..
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- thermochronology (fission track analysis). Abstract Volume, RDS-I 1st Conference on Rock deformation & Structures, 29-31 October, 2010, Jadavpur University (Kolkata), pp. 58-61.
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- Patel, R.C.**, 1999. Geomorphological study of Quaternary tectonics of the Doon valley, Garhwal Himalaya, U.P.. Xth Annual Conference of Indian Institute of Geomorphologists and National seminar on Geomorphology and environment (6th to 8th Feb., 1999), pp.88.
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- Jain, A.K., Manickavasagam, R.M., Singh, S. & **Patel, R.C.**, (1996) Extensional tectonics and Exhumation of the Himalayan metamorphic belts: Structural Evidence from SE-Kashmir and Himachal Pradesh. 11th Himalaya-Karakoram-Tibet Workshop, Flagstaff, Arizona (U.S.A), April 29 to May, 1, 1996.

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- Patel, R.C.**, 1994. Structural History of the rocks of the Higher Himalayan Crystalline and the Tethyan Sedimentary Zone along Suru-Doda valleys, Zaskar, NW-Himalaya. IX Himalayan-Karakoram-Tibet Workshop, Kathamandu, Nepal (In Abstract Volume published by Geological Society of Nepal, pp. 95.
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- Patel, R.C.** & Jain A.K., 1993. Deformation and strain patterns in the Tethyan Sedimentary Zone, Zaskar, NW-Himalaya. Abstracts, Seminar on Himalayan Geology & Geophysics, (New data and New approaches), WIHG, Dehradun, pp. 8-9.
- Patel, R.C.** & Jain A.K., 1992. Strain Patterns of the Phe Volcanics using deformed amygdulites in the collisional zone, Zaskar, NW-Himalaya. Abstract, 9th International Geological Congress, Kyoto, Japan, pp.473.
- Patel, R.C.** & Jain, A.K., 1992. Strain analysis of the Shergol Melange Zone using deformed conglomerate, Indus Suture Zone, Ladakh Himalaya. Abstract, 9th International Geological Congress, Kyoto, Japan, pp.437.
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Research work referred in different Journals and books

(a) National Journals:

- (1) Geological Society of India,
- (2) Journal of Himalayan Geology
- (3) Proc. Indian Academic Science (Earth Planetary Science)
- (4) Current Science

(b) International Journals

- (1) Earth and Planetary Science Letters,
- (2) Geology
- (3) Eclogae Geologicae Helvetiae Swiss Journal Of Geosciences
- (4) Geological Society of American Bulletin ,
- (5) Gondwana Research
- (6) The Journal of Geology,
- (7) Precambrian Research
- (8) Journal of Nepal Geological Society,
- (9) Journal of Geological Society of London
- (10) Journal of Asian Earth Sciences,
- (11) Tectonics
- (12) American Geophysical Union
- (13) International Journal of Earth Sciences (Geol Rundsch)
- (14) Geological Magazine
- (15) Lithosphere
- (16) Geosphere
- (17) Acta Petrologica Sinica
- (18) Earth Science Frontiers
- (19) Geomorphology

(c) Books

- (1) Evolution of Geological Structures in Micro to Macro- scales (Edited by S. Sengupta) published in 1997 by Chapman & Hall, London.
- (2) Himalaya and Tibet Mountain roots to mountain tops Special paper 328, 1999, Geological Society of America, Edited by Macfarlane, A, Sorkhabi, R.B. and Quade, J.

- (3) Himalayan Collision Tectonics, Gondwana Research Group Memoir 7, 2002, International Association for Gondwana Research, Department of Natural Environmental Science, Kochi University, Akebono-cho2-5-1, Kochi780-8520, Japan, By: Jain, A.K., Singh, S. and Manickavasagam, R.M.
- (4) Geology of NW Indian Himalaya , by: Steck A., Reprint from Eclogae Geologicae Helvetiae Swiss Journal of Geosciences, Vol.96, No. 2, 2003.

M. Academic/Seminar Visit:

International: 09

9. American Geophysical Union (AGU) Fall Meeting, Moscon Center, San Francisco, **USA** , 9th to 13th December, 2019.
8. 30th Himalayan-Karakoram-Tibet Workshop, 2015, Wadia Institute of Himalayan Geology (WIHG), Dehradun, **India**, 6th to 8th October, 2015.
7. An International Conference on Geology of Himalaya-Karakoram-Tibet Region
The 27th Himalaya-Karakoram-Tibet Workshop, 2012, Kathmandu, **Nepal**, 28th - 30th November, 2012
6. 25th Himalayan-Karakoram-Tibet Workshop 2010, San Francisco, **USA** – June, 2010
5. 23rd Himalayan-Karakoram-Tibet Workshop 2008, Leh, **India**, 7-11 August, 2008
4. Commonwealth Academic Fellowship at University College London in 2005 by
Commonwealth Scholarship Commission in **the United Kingdom**
3. General Assembly 2006 of the European Geosciences Union held in Vienna, **Austria**, 2-7 April, 2006.
2. The 19th HKT Workshop, 10-12 July, 2004, Niseko, **Japan**. 2004.
1. IX Himalayan-Karakoram-Tibet Workshop, Kathamandu, **Nepal**, 1994

National : 15

16. National Seminar on “ Recent researches in Earth Sciences from interior of the Earth to space Geosciences”, Organised by Department of Geology, Govt. College, **Sundargarh**, Odisha, 22nd to 23rd, December, 2017.

15. National Seminar on Rock Deformation and Structures (RDS-III), 29-31 October, 2014 Organised by Department of Applied Geology, Dibrugarh University, **Dibrugarh-786004**.
14. 1st International Conference of Association of Punjab Geographers on Disasters, Natural Resource Management and Socio-economic Development, October 4-5, 2013 Organised by Department of Geography, Kurukshetra University, **Kurukshetra**.
13. National Conference on Earth Sciences in India: Challenges and Emerging Trends (ESICET 2013), Department of Earth Sciences, IIT, **Roorkee**.
12. WIHG-IGU workshop on “ Modern Perspective in Himalayan Geosciences” between June 11 and 12, 2013, W.I.H.G., **Dehra Dun**, India.
11. International Conference on Indian Monsoon and Himalayan Geodynamics Circular (IMHG 2011), November 2-5, 2011, W.I.H.G., **Dehra Dun**, India
10. International Association for Gondawana Research Conference Series No. 12, 8th International Symposium on Gondawana to Asia “Supercontinent Dynamics: India and Gondawana” CSIR-NGRI, **Hyderabad**, India, August 26-28, 2011
9. International Symposium on Precambrian Accretionary Orogens and Field workshop in Dharwar Craton Southern India, 2-11 February, 2011, Department of Geology, Delhi University, **Delhi**, India.
8. Sensitization workshop on Geology and Metallogeny of Bihar and Jharkhand States from 17 to 18 May, 2010 at Vinoba Bhava University, **Hazaribagh**, Jharkhand.
7. National Conference on Rock Deformation and Structures (RDS-1), 29th – 31st October, 2010, Jadavpur University, **Kolkata**.
6. National Seminar on “Geodynamics, sedimentation and biotic response in the context of India-Asia collision” Nov., 26th – 28th, 2009, Department of Geology, Mizoram University, **Aizawl, Mizoram**.
5. National seminar on Magmatism, Tectonism and Mineralization (MTM-2007) and X Annual Convention of South Asian Association of Economic Geologists (SAAEG) (India Chapter), 29-31 October, 2007 held at Department of Geology, Kumaon University, **Nainital**, Uttarakhand.
4. Seminar on Contributions to Himalayan Geology, 22-25 October, 2001 Wadia Institute of Himalayan Geology, **Dehradun**.
3. Symposium on Tethys of the Himalaya and Adjoining Regions, November, 15-17, 1995, WIHG, **Dehradun**.

2. In Group Meeting Seismotectonics and Geodynamics of the Himalaya, Deptt. Of Earth Sciences, University of Roorkee, **Roorkee**, 1994.

1. Seminar on Himalayan Geology & Geophysics, (New data and New approaches), WIHG, **Dehradun**, 1993.

2.

N. Workshop/Training Programme/Refresher course Organised:

Organised Inter-disciplinary short course on “Disaster management for safer life” (For all Disciplines) from 25th to 30th November, 2019 in the department of Geophysics in collaboration with UGC-Human Resource Development centre, **Kurukshetra University**, Kurukshetra

Organised DST- sponsored Brainstorming Workshop on “Thermochronology and Himalayan Tectonics” between 27th and 28th March, 2017 in the National Facility on low-temperature Thermochronology (Fission Track Dating), Department of Geophysics, **Kurukshetra University**, Kurukshetra.

Organised Inter-disciplinary refresher course in Environment studies (For all Disciplines) from 10.12.2015 to 30.12.2015 in the department of Geophysics in collaboration with UGC-Human Resource Development centre, **Kurukshetra University**, Kurukshetra

Organised DST- sponsored specialized training programme on Fission Track Thermochronology and its application between 10th to 16th February, 2014 in the National Facility on low-temperature Thermochronology (Fission Track Dating), Department of Geophysics, **Kurukshetra University**, Kurukshetra.

O. Lectures Delivered/Published:

1. Delivered lectures on “**Fission Track Dating Method and Application of Fission Track Analysis to Geological Problems**” in SERC 3rd Module (Active Tectonics and Modern Structural Geology) held at Wadia Institute of Himalayan Geology, Dehradun, from 6-20 February, 2007.

2. Delivered lectures on “**Low-temperature thermochronology and its geological application with special reference to Bihar and Jharkhand**” in Sensitization workshop on Geology and Metallogeny of Bihar and Jharkhand States sponsored by DST, Govt. of India conducted by the University Department of Geology, Vinoba Bhave University, Hazaribag during 17-18 May, 2010.

2. Delivered lecture on “**Exhumation of the Himalayan orogen using low-temperature thermochronology**” in Department of Earth Science, IIT, Mumbai on 18.01.2012.

3. Delivered lecture on “**Himalayan tectonics and its Exhumation**” on 06.03.2013 to Trainee Officers of Batch _D of 36th Orientation Course for Geologist Conducted by Geological Survey of India, Field Training Centre- Saketi at Camp-Solan, Himachal Pradesh
4. Delivered lecture on “**Low-Temperature Thermochronology: Applications to mountain building processes**” at Department of geology, Kumaon University, Nainital, Uttarakhand on 1 April, 2013.
5. Delivered the Foundation Day Lecture of Society of Earth Scientists, India on “**Exhumation Process and its Reflections in Himalayan Orogeny using Fission Track chronology**” on 12th April, 2014 in the Department of Earth and Planetary Sciences, University of Allhabad.
6. Delivered an invited talk on “**Himalayan Orogen**” in the Department of Geology, University of Jammu on 31st January, 2019.
7. Delivered a special lecture titled “**Fission Track dating and its geological applications**” on 24th July, 2019 at 12 noon to 1.00pm in the Department of Geology, University of Madras, Guindy Campus, Chennai-600 025.
- 8.

P. International Collaboration with:

1. **Dr. Andy Carter, Low Temperature Thermochronology Lab., University College, London, U.K.:** Exhumation history of the Central Himalayas revealed by Fission track thermochronology in the Dhauliganga valleys, NW-India.
2. **Katharine W. Huntington,** Department of Earth and Space Sciences, University of Washington, Seattle, WA 98122, USA: Exhumation history of the NE-Himalaya.

Q. Synergistic Activities:

1. *Postgraduate (Geology) education course development:* Course development of structural Geology & Tectonics, and Physics and Chemistry of the Earth.
2. *Postgraduate dissertation:* Supervised eight students of M.Tech. (Applied Geophysics) and two students of M.Tech. (Applied Geology)

Details of M. Tech. Dissertation Supervised

Degree	Title of Thesis	Year of Award	Name of Students	Co-Supervisors
M.Tech. (Applied Geophysics)	Hydromorphological study of the Markanda Basin,	1997	Sanjeev Kumar Thakur	Dr. N.K. Gupta, Asst. Professor, Deptt. of Civil Engineering,

	Haryana			Regional Engineering College, Kurukshetra
M.Tech (Applied Geophysics)	Preparation of Zonation map in the region surrounding Brahmaputra valley	1998	Gurmeet Singh	Dr. Anand Joshi Lecturer Deptt. of Earth Sciences K.U., Kurukshetra
M.Tech. (Applied Geophysics)	Lineaments detection from remotely sensed satellite data for seismic studies around Jabalpur, M.P.	1998	Dinesh Singh Gularia	Dr. P.K. Champtiray, Scientist "C" IRS, Dehradun
M.Tech. (Applied Geophysics)	1.Application of Remote sensing in Land slide prediction 2.GIS & remote sensing based approach for landslide-seismotectonic hazard zonation (Nandprayag-Pipalkoti.	2000	Muni Lal Aasheesh Gupta	Dr. R.K. Sood, Scientist, Himachal Pradesh Remote Sensing Cell, Simla. Prof. R.C. Lakhera, Scientist "SF", Geoscience division, IIRS, Dehradun.
M.Tech. (Applied Geophysics)	Groundwater targeting in Dehradun and surrounding using remote sensing and GIS	2001	Nilesh Kumar	Mr. I.C. Das, Scientist- SD Geoscience Division, IIRS, Dehradun
M.Tech. (Applied Geophysics)	1. Geophysical surveys (SP, IP and magnetic (VF) Methods) for sulphide mineralization in Islampur area, District Mahendragarh, Haryana 2. A 3D Moho depth model for the Himalayan-Tibet from Eigen -6C ₄ Satellite Gravity Data	2015	Deepak Kumar Komal Sharma	Mr. Sanjai Kumar Singh, Sr Geophysicst, GSI, Lucknow (NR) Dr. P.S. Sunil, Associate Professor, Indian Institute of Geomagnetism, Navi, Mumbai
M.Tech. (Applied Geology) (5years)	1. Application of low-temperature thermochronology for exhumation and	2018	Sumit Kumar	Dr. O.P. Thakur, Asst. Professor, Department of Geology, Kurukshetra University, Kurukshetra-136119

Integrated course)	provenance studies of Mandi area. 2. Application of low-temperature thermochronology for exhumation and provenance studies of Joginder Nagar area (HP)		Deepak Kumar	Dr. O.P. Thakur, Asst. Professor, Department of Geology, Kurukshetra University, Kurukshetra-136119
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3. *Ph.D. dissertation*: Supervised **Nine** students

Sr. No.	Title of Thesis	Submitted By	Year of Award	Co-Supervisor
9.	Remote sensing studies for Coral reef Monitoring and Management over Indian regions	Mohit Arora	2019	Dr. Prakash Chauhan, Director, Indian Institute of Remote Sensing (IIRS), ISRO, Dehradun-248001
8.	Landslide susceptibility assessment study along Yamuna basin, Garhwal Himalaya, NW-India	Vinay Kundu	2019	-----
7.	Landslide hazard zonation mapping of upper Alaknanda basin by using Remote Sensing and GIS	Pardeep Kumar	2018	Dr. P.K. Champatiray, Scientist-SG, Indian Institute of Remote sensing (IIRS), ISRO, Dehradun-248001
6.	Tectonic and Exhumation history of the Almora Nappe, South-Eastern Kumaon Lesser Himalaya, Uttarakhand, India	Mohit Kumar	2017	Dr. P.D. Pant, Department of Geology, Kumaon University, Nainital, Uttarakhand
5.	Role of Climate and Tectonics in the evolution of bedrock and alluvial fluvial landforms in parts of Kachchh and North Gujarat	Falguni Bhattacharjee	2016	Dr Navin Juyal, Physical Research Laboratory, Geoscience Division, Ahmedabad, Gujarat
4.	Exhumation history of the Higher and lesser Himalayan crystallines in the Kumaon-Garhwal region, NW-India: as	Paramjeet Singh	2014	Dr. Nand Lal, Professor, Department of Geophysics, K.U. Kurukshetra

	revealed by Fission-Track thermochronology			
3.	Exhumation studies of the eastern Himalaya and the Shillong plateau, NE-India using Fission Track Thermochronology	Vikas Adlakha	2011	Dr. Nand Lal, Professor, Department of Geophysics, K.U. Kurukshetra
2.	Seismic hazard assessment of Himalayan regions (NE and Uttarakhand Himalayas) based on strong motion modeling of earthquake sources	Kapil Mohan	2009	Dr. Anand Joshi, Asst. Professor, Deptt. Of Earth Sciences, IIT, Roorkee
1.	Tectonic evolution and exhumation history of the Chiplakot Crystalline Belt and Higher Himalayan Crystallines along Kali-Darma valleys, Kumaon Himalaya, India	Yogesh Kumar	2004	Dr. Nand Lal, Professor, Department of Geophysics, K.U. Kurukshetra

4. Ph.D. dissertation under Supervision: 04

1. **Miss Prerna Gahlut:** Exhumation and tectonic studies along the Yamuna and Tons valleys
2. **Mr. Man Mohan:** Cenozoic Shortening And Exhumation of the Punjab Reentrant Fold-thrust belt and Forland basin in Himachal Pradesh, NW-Himalaya.
3. **Mr. Yasodanand:**
4. **Harsh Kumar :**

5. *Research Project:* Supervised Five major research projects sanctioned by Department of Science and Technology (DST), Govt. of India), One ongoing projects and two submitted for consideration.

Details of Research Project:

S. No.	Name of the Teacher	Title of the Research Project	Sponsoring Agency	Project Duration		Total Budget (in Rs.)
				From	To	
A. On Going Major Projects: Two						
1.	P.I.: Dr. R .C. Patel	Exhumation of the Higher Himalayan Crystalline	MoES, Govt. of	2018	2023	77.876 lacs

		(HHC), Ramgarh Thrust sheet and Lesser Himalayan Sequence (LHS) in the Garhwal region, NW-Himalaya: Using Fission Track and (U-Th)/He Thermochronology	India			
2.	P.I.: Dr. R .C. Patel	Palaeopedological, Sedimentological and thermochronological records of climate change and tectonics during the evolution of Siwalik succession, Punjab re-entrant	MoES, Govt. of India	2018	2021	24.696lacs
B. Completed Major Projects: Six						
1.	P.I.: Dr. R.C. Patel Co-P.I.: Dr. N. Lal	To establish National Facility for Low-temperature Thermochronology (Fission Track dating) at Kurukshetra University, Kurukshetra	DST, Govt. of India, New Delhi	2010	2018	253.99 lacs
2.	P.I.: Dr. R.C. Patel Co-P.I.: Dr. N. Lal	Exhumation of the Lesser Himalaya, Garhwal-Kumaon region, NW-India: constrained by Fission Track analysis	DST, Govt. of India, New Delhi	2008	2011	35.16 lacs
3.	P.I.: Dr. R.C. Patel Co-P.I.: Dr. N. Lal	Exhumation of the Higher Himalayan Crystallines (HHC), Arunachal Himalaya, using Fission Track Thermochronology	DST, Govt. of India, New Delhi	2006	2009	14.44 lacs
4.	P.I.: Dr. R.C. Patel Co-P.I.: Dr. A. Joshi	Integrated remote sensing and seismic hazard studies around Pithoragarh and its surrounding region, Kumaon Himalaya, Uttaranchal	DST, Govt. of India, New Delhi	2004	2007	12.34 lacs
5.	P.I. : Dr. R.C. Patel	Deformation and extensional tectonics of the Higher Himalayan Crystalline (HHC) along Kali Valley, Kumaon Himalaya, Uttaranchal	DST, Govt. of India, New Delhi	1998	2002	14.10 lacs
6.	P.I. Dr. R.C. Patel	Extensional Tectonics of the Higher Himalayan Crystalline Belt, NW-Himalaya, Himachal Pradesh	DST, Govt. of India, New Delhi	1993	1996	2.33 lacs

6. *Graduate student teaching mentor:* While lecturing at Kurukshetra University, I mentor earth sciences post-graduate students to develop their research interest, teaching skills and participate in curriculum development.

R. (a) The significant contribution and achievements:

- Prof. Patel developed a state of the art, National Centre for Low Temperature Thermochronology using Fission Tracks (LTTFT). He has applied LTTFT extensively to inaccessible terrain of the Himalaya and has provided new insights into shear zones, strain and structural analyses, neo-tectonics and exhumation history of rocks of the Himalayan orogen. His studies on the Zaskar Shear Zone (ZSZ; the South Tibetan Detachment System: STDS) led to the first elucidation of the fact that the ZSZ was initially a SW-directed thrust that was overprinted by NE-directed normal shearing implying a simple inversion of movement sense. The implication of this in geodynamics of the Himalaya is that before Miocene its crust was initially uplifted and over thickened during a crustal shortening regime (thrusting) and then during Miocene, it switched to thinning (normal movement), rapid cooling and exhumation of the High Himalayan Crystallines (HHC). This work has been highly acclaimed.
- A major issue in understanding the recent evolution of Himalaya is the delineation of the mechanisms that control erosion and exhumation across the orogen and inform on the interactions between them. Erosion and exhumation of the Himalaya are controlled by the interactions between tectonic and climatic processes. However, the contribution of tectonic processes to the observed upper crustal exhumation and the mechanisms by which they have done so remain poorly constrained. In this regard, Prof. Patel's studies on the HHC and Lesser Himalayan Sequence (LHS) in the NW- and NE-Himalaya elucidated links between exhumation, tectonics and the thermal evolution of the HHC and LHS in the NW- and NE-Himalaya. Some of the notable results from the studies by Prof Patel are listed below.
- Prof. Patel's studies on tectonic and deformation in the HHC and the crystalline klippen within the LHS show that these belts evolved through multiple episodes of compressional deformation along a NE-to-SW ductile shearing regime. He demonstrated that the Chiplakot Crystalline Belt in the Kumaon Himalaya evolved along a broad ductile shear zone rooted separately from the southern part of the Proterozoic basement along a duplex type of tectonic setting in the south of the Main Central Thrust (MCT) zone.
- LTTFT studies by Prof Patel from both hanging wall (the HHC) and footwall (the LHS) of the MCT in the NW and NE- Himalaya show young FT ages (< 5Ma) in the HHC and older FT ages (>5 Ma) in the LHS. This suggested slow exhumation of the LHS since ~28 Ma and rapid exhumation of the HHC since ~5 Ma. He inferred that

while climate influenced erosion rate in the upper brittle crust, local tectonics factors control the rock uplift in the HHC and the LHS. The reactivation of MCT via an out-of-sequence thrusting, reactivation of the MCT zone as an in-sequence thrusting, development of dome/window structures within the HHC and, thrusting and back-thrusting within the LHS have been identified as the local tectonic processes that were responsible for rock uplift. The local tectonics that control differential rock uplift within the HHC and the LHS as suggested by Prof Patel imply that the tectonic perturbation has not yet been fully adjusted by the climate induced erosion.

- In the Shillong Plateau, LTTFT study of Prof Patel provided a complete description of the complex exhumation history of the Shillong Plateau, its multiple uplifts and burial episodes, since the break-up of eastern Gondawana during Phanerozoic. His work demonstrates that the southern part of the Shillong Plateau was buried at depth and thereafter it uplifted and exhumed rapidly during Himalayan orogeny. At the same time, northern part that was buried to shallower depth, exhumed slowly. This differential exhumation was explained by Prof. Patel as being due to northward tilting of the Shillong Plateau along the Dauki Thrust during Himalayan orogeny.
- Further, Prof. Patel's other studies on the source of sediments and thermal history of the Raniganj basin of Gondawana in central India and, tectonics and landscape evolution of the Kachchh region in Gujarat have been noteworthy.

(b) Assessment of the impact of the contributions made (in the form of Citation) in the field (not exceeding 100 words)

Prof Patel has developed a National Centre for Low Temperature thermochronology at Kurukshetra University, Kurukshetra (Prior to joining BHU, Varanasi) that is now used by institutions across the country. This centre has produced over 1000 fission track ages that have helped elucidate the exhumation, tectonic history and the thermal evolution of the upper crust in Himalaya, the Shillong Plateau and the Kachchh region and has helped established provenance of sediments in many areas. His work in the Himalaya, Zaskar and Shillong region has been benchmark studies, published in reputed journals and cited extensively.

(R.C. Patel)