

## Provision of Information Regarding Patents, Trade Marks, and Copy Rights

### Center of Excellence in Molecular Biology

Sr. No	Name & Designation of Inventor/ Faculty Member/ Researcher	Cell No	E-mail	Owner of the Patent/ Trade Mark/ Copy Right (i.e. University of the Punjab)	Department	Field/ Area of Research	Title of Patent/Trade Mark/ Copy Right	Date of Patent Applied	Date of Patent Granted / Approved	Validity of Patent (i.e.the date till patent is valid)	Name of Country
1.	Dr. Tayyab Husnain and Dr. S. Riazuddin	0321-4087024 0321-8429448	tayyabhusnain@yahoo.com riazuddin@aimrc.org	CEMB, University of the Punjab	CEMB	Plant Molecular Biology	Methods for determination of protein and DNA contents for detection of <i>Bacillus thuringensis</i> in plant products	7.9.2002 Patent No. 138279	11.8.2004	6.9.2022	Pakistan
2.	Dr. Tayyab Husnain and Dr. S. Riazuddin	0321-4087024 0321-8429448	tayyabhusnain@yahoo.com riazuddin@aimrc.org	CEMB, University of the Punjab	CEMB	Plant Molecular Biology	Development of Basmati Rice Containing Multiple Transgenes	7.9.2002 Patent No. 138287	11.08.2004	6.9.2022	Pakistan
3.	Dr. Ahmad Usman Zafar and Dr. S. Riazuddin	0300-4176705 0321-8429448	ahmad.usman@ceamb.edu.pk riazuddin@aimrc.org	CEMB, University of the Punjab	CEMB	Pharmaceutical Lab	An improved Codon Optimized Human Interferon	18.7.2007 Patent No. 140574	04.08.2010	17.7.2027	Pakistan
4.	Dr. S. Riazuddin and Dr. Tayyab Husnain	0321-8429448 0321-4087024	riazuddin@aimrc.org tayyabhusnain@yahoo.com	CEMB, University of the Punjab	CEMB	Plant Molecular Biology	A process for improving transgenic cotton plants (Commercialized)	18.7.2007 Patent No. 140649	21.4.2011	17.7.2027	Pakistan

5.	Dr. Tayyab Husnain and Dr. S. Riazuddin	0321-4087024 0321-8429448	tayyabhusnain@yahoo.com riazuddin@aimrc.org	CEMB, University of the Punjab	CEMB	Plant Molecular Biology	Heat-Tolerant Cotton Plant Containing Multiple Transgenes	21.1-2009 Patent No. 0186104	22.07.2010	_	United States
6.	Dr. Ahmad Usman Zafar and Dr. S. Riazuddin	0300-4176705 0321-8429448	ahmad.usman@ceamb.edu.pk riazuddin@aimrc.org	CEMB, University of the Punjab	CEMB	Pharmaceutical Lab	A process for modification of recombinant human interferon for therapeutic use	24.7.2009 Patent No. 140586	12.01.2011	23.7.2029	Pakistan
7.	Dr. Ahmad Usman Zafar and Dr. S. Riazuddin	0300-4176705 0321-8429448	ahmad.usman@ceamb.edu.pk riazuddin@aimrc.org	CEMB, University of the Punjab	CEMB	Pharmaceutical Lab	A method of purification of recombinant protein products,	24.07.2009 Patent No. 140587	12.01.2011	23.7.2029	Pakistan
8.	Dr. S. Riazuddin Atta ur Rehman, Dr. Usman Zafar, Usman Ali Mushtaq, Khalid M. Khan, Dr. Tayyab Husnain and Dr. Javed Akram	0321-8429448	riazuddin@aimrc.org ahmad.usman@ceamb.edu.pk	CEMB, University of the Punjab	CEMB	Pharmaceutical Lab	7-Nitro-2-(3—Nitro Phenyl)-4H-3,1-Benzoxazin-4-one or derivatives thereof for treating or preventing antiviral infections.	7.8.2010 US Patent No. 8,148,368 B2	3.4.2012	_	United States

9.	Dr. Abdul Qayyum Rao: Dr. Idrees Ahmad Nasir: Dr. Tayyab Husnain	0322-4676161	qayyumabdul77@yahoo.com dr.idrees@gmail.com tayyabhusnain@yahoo.com	CEMB, University of the Punjab	CEMB	Plant Molecular Biology	Novel Transgenic Approach to Decrease Cost of Cotton Production in Pakistan	1.9.2010 Patent No. 142243	20.7.2016	9.1.2030	Pakistan
10.	Dr. S. Riazuddin, Usman Ali, Usman Ashfaq, Shaheen N. Khan, Dr. Javed Akram, Atta ur Rehman, M. Iqbal Choudhary, Khalid M. Khan and Zulfiqar Ali Khan.	0321-8429448 0300-4176705	riazuddin@aimrc.org ahmad.usman@ce mb.edu.pk	CEMB, University of the Punjab	CEMB	Pharmaceutical Lab	3-Amino-2-(4-Nitrophenyl)-4-(3H)-Quinazolinone or derivatives thereof for treating or preventing antiviral infections	31.12.2011 US Patent No. 8,809,354 B2	19.8.2014	-	United States
11.	Beenish Aftab, Dr. Bushra Rashid and Dr. Tayyab Husnain	0334-4373911 0321-4087024	Bushra.cemb@pu.edu.pk tayyabhusnain@yahoo.com	CEMB, University of the Punjab	CEMB	Plant Molecular Biology	Isolation and Identification of Pakistani Cotton Leaf Curl Virus Tolerant Gene.	6.7.2015 Submitted vide App. No. 440/2015	-	-	Pakistan

12.	Aisha Khalid and Prof. Dr Kausar Malik	0345-8764999	kausarbasit786@yahoo.com	CEMB, University of the Punjab	CEMB	Biopesticide development	A biopesticide for <i>Triboliumcastaneum</i> in stored grain products	6.5.2015 (IPO # 256/2015).	-	-	Pakistan
13.	Prof. Dr Kausar Malik	0345-8764999	kausarbasit786@yahoo.com	CEMB, University of the Punjab	CEMB	Immunology	A quick, easy, portable and economic procedure for detection of genetically modified organisms	22.4.2015 (IPO # 229/2015)	-	-	Pakistan
14.	Prof. Dr Kausar Malik and Timsaal Arjumand Basra	0345-8764999	kausarbasit786@yahoo.com	CEMB, University of the Punjab	CEMB	Biopesticide development	A process of formation of a biopesticide having deleterious effects on stored grains pests <i>Triboliumcastaneum</i>	19.6.2015 (IPO # 389/2015).	-	-	Pakistan
15.	Dr. Muhammad Shafique, Dr. Muhammad Saqib Shahzad, Dr. Ziaur Rahman, Dr. Ahmad Ali Shahid and Dr. Tayyab Husnain	0333-6148635 0321-4087024	shafique@cemb.edu.pk tayyabhusnain@yahoo.com	CEMB, University of the Punjab	CEMB	Forensic Lab	Development a Process of PCR Multiplex System for the Simultaneous Detection of Conventional STRs, MiniSTRs and YSTRs.	24.03.2016 Application No. 172/2016	-	-	Pakistan
16.	Abdul Munim Farooq, Bushra Tabbasum,	0321-6021147 0321-4087024	munimfarooq@gmail.com dr.idrees@gmail.com	CEMB, University of the Punjab	CEMB	Molecular Breeding Seed Biotech Lab	DEVELOPMENT OF CEMB TRANSGENIC MAIZE INBRED LINES. IPO # 242/2017	02.05.2017 Application 242/2017	-	-	Pakistan

	Zahida Qammar, Idrees Ahmad Nasir and Dr. Tayyab Husnain		tayyabhusnain@yahoo.com								
17.	Dr. Abdul Qayyum Rao: Dr. Naila Shahid: Assistant Professor	0322-4676161 0301-4710358	qayyumabdul77@yahoo.com naila.cemb1@gmail.com	CEMB, University of the Punjab	CEMB	Plant Molecular Biology	Novel Plant based Biotechnological approach for the production of edible vaccine against Newcastle disease virus NDV of Poultry	20-04-2018 Application #328/18	-	-	Pakistan
18.	Bushra Tabbasum, Idrees Ahmad Nasir	0321-7440016	dr.idrees@gmail.com	CEMB, University of the Punjab	CEMB	Molecular Breeding Seed Biotech Lab	A Novel Technique to Enhance sugar recovery in Pakistani Sugarcane. (IPO # 169/2018).	19.3.2018 Application No. 169/2018	-	-	Pakistan
19.	Idrees Ahmad Nasir, Bushra Tabassum	0321-7440016	dr.idrees@gmail.com	CEMB, University of the Punjab	CEMB	Seed Biotechnology Lab	Development of Pakistani Sugarcane Containing siRNA Gene Silencing,	16.1.2012 (IPO #26/2012).	-	-	Pakistan
20.	Dr. Idrees Ahmad Nasir, Dr. Bushra Tabassum, Dr. Zahida Qamar and Dr. Abdul Munim Farooq	0321-7440016	dr.idrees@gmail.com	CEMB, University of the Punjab	CEMB	Seed Biotechnology Lab	Development of Transgenic Sugarcane for Insect Resistance	27.01.2020 Application No. 59/2020	-	-	Pakistan

21.	Dr. Kausar Malik, Ms. Arshia Nazir, Mr. Husnain Qamar, Mr. Hamza Basit,	0345-8764999	kausarbasit786@yahoo.com	CEMB, University of the Punjab	CEMB	Pest Control	Development of Effective Plant-based Biopesticide from Calliandra harrisii for the Control of Tribolium castaneum	23.09.2020 (IPO # 592/2020)	-	-	Pakistan
22.	Ms. Abida Shehzadi, Dr. Muhammad Shafique, Dr. Ahmad Ali Shahid	0333-4591456	abida@cemb.edu.pk	CEMB, University of the Punjab	CEMB	Forensic Lab	Development of new 21-Plex STR Process for the Simultaneous Detection of Autosomal, Y and X-Chromosomal Markers	27.10.2020 Application No. 725/2020	-	-	Pakistan
23.	Dr. Bushra Ijaz, Ms. Somayya Tariq, Ms. Shereen Gull, Ms. Sidra Rehman, Dr. Tayyab Husnain	0321-4722060	bijaz_009@yahoo.com	CEMB, University of the Punjab	CEMB	Genomics	Natural Inhibitory Compound From Cassia Fistula Plant against HCV NS5A Gene of Hepatitis C virus	04.02.2020 Application No. 58/2020	-	-	Pakistan
24.	Dr. Bushra Ijaz, Ms. Somayya Tariq, Koloko Brice Landry, Ms. Sidra Rehman, Ms. Ayesha Malik, Dr.	0321-4722060	bijaz_009@yahoo.com	CEMB, University of the Punjab	CEMB	Genomics	Natural Inhibitory Compound Evofolin B From Tectona Grandis Plant against HCV NS5A Gene of Hepatitis C Virus	27.01.2020 Application No.60/2020	-	-	Pakistan

	Tayyab Husnain										
25.	Dr. Kausar Malik, Ms. Adeemna Saeed, Ms. Arshia Nazir,	0345-8764999	kausarbasit786@yahoo.com	CEMB, University of the Punjab	CEMB	Pest Control	Development of Plant-based Biopesticide ; Derived from <i>Diospyros malabarica</i> to Control <i>Triboliumcastaneum</i>	27.01. Application No. 61/2020)	-	-	Pakistan
26.	Dr. Kausar Malik, Mr. Husnain Qamar, Ms. Qurat-ul-Ain Aleem, Mr. Hamza Basit, Dr. Tayyab Husnain	0345-8764999	kausarbasit786@yahoo.com	CEMB, University of the Punjab	CEMB	Microbiology	Novel Antibacterial and Pesticidal Potential of <i>Fagopyrum esculentum</i>	27.01.2020 (IPO # 62/2020)	-	-	Pakistan
27.	Dr. Azra Mehmood, Ms. Amna Ramzan, Ms. Hira Butt, Ms. Saba Tasneem, Dr. Ahmad Ali Shahid, Dr. Sheikh Riazuddin	0333-4107008	azra_mehmood@hotmail.com	CEMB, University of the Punjab	CEMB	Stem Cell	Production of Vitamin E Primed Fibroblasts Carrier Plasma Gel for Treatment of Diabetic Wounds	14.09.2020 Application No. 591/2020	-	-	Pakistan
28.	Bushra Tabbasum,	0321-7440016	dr.idrees@gmail.com	CEMB, University of the Punjab	CEMB	Molecular Breeding	Novel transgenic approach to decrease	3.3.2017	-	-	Pakistan

	Idrees Ahmad Nasir and Dr. Tayyab Husnian					Seed Biotech Lab	cost of potato production in Pakistan'	(IPO# 157/2017).			
29.	Dr. Abdul Qayyum Rao: Dr. Ahmad Ali Shahid:	0322-4676161	qayyumabdul77@yahoo.com	CEMB, University of the Punjab	CEMB	Neutraceutical and Microbial Biotechnology	Development of Chewing and Sucking Insect Resistant Cotton Application #54/2021	11-01-2021 (IPO# 54/2021)	-	-	Pakistan
30.	Mohsin Ahmad Khan, Nadeem Ahmed, Rabbia Pervaiz, Rashid Bhatti, Kausar Malik and Ahmed Ali Shahid	0300-4413747	mohsinkha@gmail.com	CEMB, University of the Punjab	CEMB	Neutraceutical and Microbial Biotechnology	Genetically Engineered Algae ( <i>chlamydomonas reinhardtii</i> ) Strain Expressing Constitutively Mosquito Larvicidal cry11ba Gene and its Derivatives	18.05.2021 (IPO # 359/2021)	-	-	Pakistan
31.	Mohsin Ahmad Khan, Nadeem Ahmed, Saad Tahir, Saba Tauseef, Hira Nasir, Muha	0300-4413747	mohsinkha@gmail.com	CEMB, University of the Punjab	CEMB	Molecular Biology	Novel Recombinant Human Epidermal Growth Factor (rhEGF) Gene Expressed in Yeast ( <i>Pichia pastoris</i> )	30.09.2021 (IPO # 736/2021)	-	-	Pakistan



	mmad Islam Khan , Samia Afzal , Rashid Bhatti, Kausar Malik and Ahmad Ali Shahid										
32.	Bushra Ijaz, Somayya Tariq, Hamza Anjum, Koloko Brice Landry, Ahmad Ali Shahid	0321-4722060	bijaz_009@yahoo.com	CEMB, University of the Punjab	CEMB	Applied and Functional Genomics Group	3-hydroxy -1, 2-bis(4hydrox-3methoxyl) propane-1-one:-Inhibitory Agent of Hepatic Fibrosis	07.10.2021 Application No. 760/2021	-	-	Pakistan
33.	Dr. Aneela Yasmeen: Dr. Abdul Qayyum Rao: Dr. Tayyab Husnain: Dr. Ahmad Ali Shahid:	0334-7609019	anilamalik5@gmail.com	CEMB, University of the Punjab	CEMB	Plant Molecular Biology	CRISPR based genome editing approach to reduce vacuolar invertase in potatoes during cold storage 221/2022	30-03-2022 Application No. 221/2022	-	-	Pakistan
34.	Dr. Abdul Qayyum Rao: Dr. Ahmad Ali Shahid:	0322-4676161	qayyumabdul77@yahoo.com	CEMB, University of the Punjab	CEMB	Plant Molecular Biology	CRISPR based genome editing approach to combat insects pests and viruses	30-03-2022 Application No. 222/2022	-	-	Pakistan

35.	Mr. Tahir Rehman Samiullah: RO Dr. Abdul Qayyum Rao: Dr. Naila Shahid:	0322-4676161	qayyumabdul77@yahoo.com	CEMB, University of the Punjab	CEMB	Plant Molecular Biology	Plant based Edible Vaccine against Avian Influenza H9N2 Virus 223/2022	30-03-2022 Application No. 223/2022	-	-	Pakistan
36.	Dr. Abdul Qayyum Rao: Dr. Saira Azam:	0322-4676161	qayyumabdul77@yahoo.com	CEMB, University of the Punjab	CEMB	Plant Molecular Biology	An Alternative Approach to Enhance the Resilience of Transgenic Cotton for Insect Resistance	01-01-2024 Application No. 1/2024	-	-	Pakistan
37.	Dr. Nadeem Ahmed, M. Akram Nao Akusa Fujimura, Dr. Saad Tahir, Muhammas Asad Ali	0301-4727440	nadeem.ahmed@cemb.edu.pk	CEMB, University of the Punjab	CEMB	Proteomics and Biopharmaceutical	A Novel Process for the Purification of Biosimilar (Recombinant Human Interleuken 11) using Escherichia Coli	25.7.2024 Application No. 518/2024	-	-	Pakistan
38.	Dr. Abdul Qayyum Rao, Dr. Ahmad Ali Shahid Dr. Nadeem Ahmad Dr. Saira Azam	0322-4676161	qayyumabdul77@yahoo.com	CEMB, University of the Punjab	CEMB	Plant Molecular Biology	Improvement of Aloe-Vera Cosmetic Impact on Human Skin through its Genetic Modification by Human Serum Albumin	7.10.2024 Application No. 699/2024	-	-	Pakistan
39.	Dr. Faqeeha Javed, Dr. Muhammad Shafique, Dr. Ahmed Ali Shahid	0333-6148635	shafique@cemb.edu.pk	CEMB, University of the Punjab	CEMB	Forensic DNA Typing	Development of a Process of PCR Multiplex System for Rapidly Mutating-Y Chromosomal Short Tandem Repeat Loci	19.11.2024 Application No. 319/2024	-	-	Pakistan

### Computer Sciences

1	Dr. Muhammad Sahid Farid (Associate Professor)	+923334454227	shahid@pucit.edu.pk	Sisvel Technology SRL	Department of Computer Science	Computer Science	Method and device for edge shape enforcement for visual enhancement of depth image based rendering of a three-dimensional video stream	2014-09-29	2018-08-14	2035-05-07	US
2	Dr. Muhammad Sahid Farid (Associate Professor)	+923334454227	shahid@pucit.edu.pk	Sisvel Technology SRL	Department of Computer Science	Computer Science	Apparatus and method for image segmentation	2015-10-27	2018-10-17	2035-10-27	European Patent Office

### School of Biological Sciences

1.	Prof. Dr. A.R. Shakoori Emeritus Professor Faculty Member	03334673255	arshakoori.sbs@pu.edu.pk	Inventors	School of Biological Sciences		PROCESS FOR RECOMBINANT PROTEIN EXPRESSION AUGMENTATION IN BACILLUS EXPRESSION SYSTEM	08/05/2015	29/06/2017	29.062035	USA
2.	Prof. Dr. M. Waheed Akhtar Emeritus Professor	03004105823	mwa.sbs@pu.edu.pk	M. Waheed Akhtar, Madeeha Afzal,	School of Biological	Life sciences	“Multi-epitope fusion antigens for the diagnosis of tuberculosis”	15/09/2017	2019	15.09.2037	Pakistan

	Faculty Member			Sana Khurshid, Ruqyya Khalid.	al Sciences						
3.	Prof. Dr. M. Waheed Akhtar Emeritus Professor Faculty Member	03004105823	mwa.sbs@pu.edu.pk	M. Waheed Akhtar, Ruqyya Khalid, Madeeha Afzal and Sana Khurshid	School of Biological Sciences	Life sciences	“A polynucleotide comprising a nucleotide sequence encoding a fusion protein”	08/05/2019	2021	08.05.2039	Paksitan
4.	Prof. Dr. M. Waheed Akhtar Emeritus Professor Faculty Member	03004105823	mwa.sbs@pu.edu.pk	M. Waheed Akhtar, Saima Sadaf, Shahzad Ali	School of Biological Sciences	Life sciences	“A non-naturally occurring enzyme comprising a nucleic acid sequence homologous with endoglucanase of Clostridium Specie”	08/05/2019	2021	08.05.2039	Paksitan
5.	Prof. Dr. M. Waheed Akhtar Emeritus Professor Faculty Member	03004105823	mwa.sbs@pu.edu.pk	M. Waheed Akhtar, Saima Sadaf, Abdul Basit	School of Biological Sciences	Life sciences	“Truncation and CBM engineering of CelZ.C of Thermotoga Sp. for improved biomass degradation”	24/10/2019	2021	24.10.2039	Paksitan
6.	Prof. Dr. M. Waheed Akhtar Emeritus Professor Faculty Member	03004105823	mwa.sbs@pu.edu.pk	Shaista Arif, Mohsina Akhtar, Mohsin Shad, Sania Javed, Muhammad Sajjad and M. Waheed Akhtar.	School of Biological Sciences	Life sciences	Novel Fusion protein NSFU1 with enhanced sensitivity for serodiagnostic tests of COVID-19”	14/06/2024	(Applied)		Paksitan

7.	Dr. Nasir Ahmad Associate Professor Faculty Member	03334408881	mna.sbs@pu.edu.pk	Inventors	School of Biological Sciences	Thermostable Industrial enzymes	Single step liquefaction and saccharification of Corn Starch Using an Acidophilic Calcium Independent Hyperthermophilic Pullulanase	18/02/2014	17/05/2016	12/02/2033	USA
----	--	-------------	-------------------	-----------	-------------------------------	---------------------------------	---	------------	------------	------------	-----

