

Nayparivartan

e-NEWSLETTER

Publication by-

**Department of Scientific & Industrial Research
(DSIR)**

**Ministry of Science & Technology,
Govt. of India**



Volume 4, 2015

NEWS Update

CEL launches 40MW Solar Module Manufacturing Unit dedicated to Nation

Dr. Harsh Vardhan, Hon'ble Union Minister, Ministry of Science & Technology and Ministry of Earth Sciences on 03.06.2015 inaugurated the automated solar photovoltaic (SPV) module manufacturing plant installed at Central Electronics Limited (CEL). The new unit is capable of manufacturing more than 360 modules per day of 300 wp power capacity. Dr Harsh Vardhan said it is a step further towards the mission of Make in



India

Central Electronics Limited (CEL), established in June 1974, is a Technology and Production Enterprise of the Department of Scientific & Industrial Research, Ministry of Science & Technology, Government of India. CEL aspires to be significant player in the field of Solar Photovoltaic Energy particularly for rural applications as also for Industrial application. CEL with its own in house R&D base and having strong links with various national laboratories and institutions lays special emphasis on indigenous technology & competence development in the area of renewable energy.

Dr. Girish Sahni assumes charge as next Secretary, Department of Scientific & Industrial Research (DSIR)

Dr. Girish Sahni, who had been the Director, CSIR-Institute of Microbial Technology (CSIR-IMTECH), Chandigarh, assumed charge as the Secretary, Department of Scientific & Industrial Research (DSIR), Ministry of Science & Technology and Director General of the CSIR, with effect from the 24th August 2015.

Dr. Sahni has successfully generated, and transferred to industry, technology for India's first indigenous clot

buster drug,

natural streptokinase (under brand name tTPase marketed by Cadila



Pharmaceuticals Ltd., Ahmedabad), and recombinant streptokinase (produced by Shasun Drugs, Chennai) marketed as several brand names eg. tKlotbuster (Alembic) and tupiFloq (Lupin). Recently, the team led by him developed the first of its kind fourth-generation 'Anti-thrombotic' clot buster.

Dr Sahni's contributions have been recognized through various scientific and industrial awards, such as the Vasvik award, Government of India's Biotechnology Process Development and Commercialization Award, the Ranbaxy Research Award and the CSIR Technology Shield for Process Development.

DSIR backs Biotechnology start ups under- Start up India, Stand Up India Initiative:

Hon'ble Prime Minister of India has announced Startup India, Stand India initiative in this year's Independence Day address, urging to create a robust ecosystem in which entrepreneurship and innovation will flourish.

Bio-technology sector is a multidisciplinary sector divided into bio-pharma, bio-services, bio-agri, bio-industrial, bio-informatics and the like. Most of the Biotech startups are dependent on public or private funded host Institute or Techno Park for infrastructure facilities and often mentorship, thus leveraging the ecosystem of the Incubator. These start-ups work on cutting edge technologies leading to innovative and novel products and services with a scope of generating IPs, however they are involved in high risk and intensive investment based research for which they require more incentives and capital support.

Fuelled by this initiative and understanding the need of high capital investments for Life sciences Start ups, department has relaxed the condition of 3 years of existence and having own infrastructure in the case of biotech startups for recognition which will further support them in getting funds from other funding agencies where DSIR recognition is mandatory.

The start-ups desirous of seeking recognition of DSIR should send an email to rdi@nic.in giving profile of the company with a request to allow submission of online application for recognition

[DSIR to promote entrepreneurship in Biotechnology sector has announced relaxation in 3 years of existence for granting short term recognition to Biotech start-ups established in Incubator centre or technology Parks.]

The applicant company should submit the following profile:

- a) Name of the Company and Permanent Account Number (PAN No.)
- b) Registration number and date of incorporation under the Companies Act, 1956 as amended in 2013
- c) Complete address of the R&D unit
- d) Brief write up on ongoing research activities and achievements
- e) Details of existing and proposed sources of funding and revenue

Detailed guidelines for Recognition of Start ups can be accessed from the following link: <http://dsir.csir.res.in/webdsir/#files/12plan/bird/biotech-startups.html>

NanoCrySP: A novel technology for generation of nano crystalline solid dispersions from NIPER, Mohali

Dr. Arvind K Bansal, is currently Professor and Head, department of Pharmaceutics at the National Institute of Pharmaceutical Education and Research (NIPER), SAS Nagar, Punjab, India. His group works with the mission statement - developing science based industrially viable pharmaceutical technologies and works closely with pharmaceutical industry to create opportunities for commercial exploitation of the products.
NIPER is recognized as SIRO by DSIR for its research initiatives, ongoing activities and achievements.

Modern drug discovery techniques have resulted in an increasing number of poorly water soluble drug compounds. Their low aqueous solubility results in slow dissolution, leading to poor oral bioavailability. Over the past few decades, many strategies have been developed to increase the dissolution rate of these types of drugs. These strategies include micronization, solubilization with co-solvents, use of permeation enhancers, oily solutions, solid state alterations, salt formation and precipitation techniques. Each of these techniques for solubility enhancement has its own limitations. Nanotechnology based drug delivery systems can resolve the problems associated with these conventional formulation approaches. Out of these systems, drug nanocrystals have emerged as a very promising option and have been used in numerous commercialized products. Drug nanocrystals can be generated using bottom-up and top-down techniques.

Top-down methods to generate drug

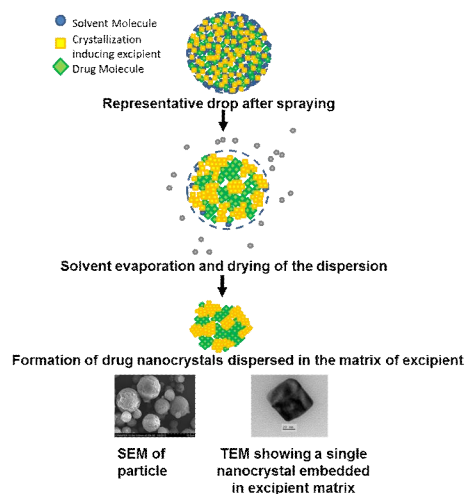


Figure: Schematic showing formation of Nanocrystals using NanoCrySP

nanocrystals involve NanoCrystals® (Élan system), Nanomill® (Élan system), Microfluidizer technology (Microfluidics), Dissocubes® (SkyePharma), and Nanopure® (Abbott Laboratories). Whereas, most of the nanocrystals based products on the market have been prepared by top-down methods, the number of products prepared by bottom-up methods is very limited. Bottom-up techniques to generate drug nanocrystals involve the controlled precipitation/crystallization of drug from its solution state. The examples of bottom-up technology based products are Gris-PEG® (griseofulvin in PEG8000) and Cesamet® (nabilonein PVP).

Top-down production methods suffer from disadvantages such as use of surfactants, long processing times, difficulty in achieving a uniform size distribution, low yields, high energy input and possible contamination from the grinding media. Due to high energy

requirements, top-down processes can also cause solid state transformations and chemical degradation of the drug. The most common problem with bottom-up techniques is their difficulty to scale-up.

Bottom-up techniques also suffer from pitfalls such as possible decomposition of the drug (hot melt method), contamination from toxic organic solvents (solvent evaporation method), difficulty in controlling the size of the drug crystals (hydrosol technology), limited solubility of the drug in the solvent (supercritical fluid technologies), and long processing times (controlled crystallization during freeze drying)

NIPER, S.A.S. Nagar has developed a novel NanoCrySP technology to generate nanocrystals of poorly water soluble drugs. NanoCrySP is a spray drying based method to generate solid particles containing drug nanocrystals and small molecule excipients. Latter acts as a crystallization inducing agent and encourages nucleation of drug crystals. The excipient and process conditions are optimized, so as to enable formation of nanosized crystals. Briefly, a solution of drug and excipient in a solvent or solvent mixture is co-spray dried to obtain discrete particles of 2 to 50 micron size. Each particle consists of drug nanocrystals in the range of 10-1000 nm. NanoCrySP provides enhanced solubility and dissolution rate, thus resulting in increased oral bioavailability.

NanoCrySP offers several benefits over conventional bottom-up and top-down

The NanoCrySP technology is protected through patents in India, USA and European Union and the rights have been transferred to an Indian pharmaceutical company

techniques of nanocrystal generation. Its advantages include simplicity of process, cost effectiveness and industrial applicability. Generation of nanocrystal using NanoCrySP is less

energy intensive and generates %impurity-free+ final product. NanoCrySP provides a viable alternative to the current patent protected international technologies.

NanoCrySP can be utilized for (i) pharmaceutical development of new chemical entities, (ii) differentiated products of existing molecules and (iii) generic drug products. Nanotechnology enabled drug delivery market is estimated to be US\$ 136 billion. Out of this, 60% share is expected to be occupied by nanocrystals. Current nanocrystal technologies involve two distinct phases- (i) generation of nanocrystals and (ii) development of nanocrystal based formulations. Latter involves significant challenges and is time consuming. NanoCrySP not only provides significant energy savings during generation of nanocrystals but also simplifies subsequent formulation development. It is estimated that development time may be reduced by 30 to 40% as compared to current industry practices. The NanoCrySP technology is protected through patents in India, USA and European Union and the rights have been transferred to an Indian pharmaceutical company.

Industry with In house R&D units recognized by DSIR during April- June, 2015

Fresh recognition was granted to the in-house R&D units of the following companies having well defined R&D objectives with dedicated R&D infrastructure and manpower.

S. No	Name of Company	Research Area	Validity of recognition
1	M/s.Karnataka State Seed Corporation Ltd., Bangalore	Research on high yielding hybrids for cereals, vegetables and cotton. Company has developed BRSSC-1, a High yielding Sunflower Hybrid with high oil content.	31.03.2018
2	M/s.Sree Rayalaseema Hi Strength Hypo Limited, Kurnool	Process improvement for manufacturing of organic and inorganic chemical compounds, products and gasses.	31.03.2018
3	M/s. Welspun India Limited, Kutch	Process and product improvement for home textile products. Company has developed the products like Cotton excel towels, Next gen hygro, Stop spot towels, Bleach master towels, Micro Fibre Chenille Rug, Ecolon Rug, Hygro Fresh Sheets, Cocoon Sheets, RSVP Sheets, Cotton Lyocell Performance Sheets, Anti Bed Bug Sheets etc.	31.03.2017
4	M/s. Genes N Life Healthcare Pvt. Ltd, Hyderabad	The Company is engaged into research and development of new in-vitro diagnostic genetic test and to identify genetic biomarkers. Company has developed Sperm Chromatin Integrity Assay (SCIA) which is use for detecting sperm DNA fragmentation in male infertility and DNA based diagnostic test for Gilbert Syndrome.	31.03.2017
5	M/s. SARA-Sae Pvt. Ltd., New Delhi	The company is engaged in oil field equipments & flow products. The company has undertaken projects like Tong Back-up: 4-1/2, 8-5/8",13-5/8" for shallow wells (upto 2000ft) and Real Time Monitoring system for BOP control units etc.	31.03.2018
6	M/s. BDR Life Sciences Pvt. Ltd., Vadodara	Company is engaged in technology/process development for Active Pharmaceuticals Ingredient (API) or Drug substance. Company has been granted four patents on Water Soluble Anti-cancer Agents and Pharmaceutical Compositions thereof and Process for preparation of Pyrazole derivatives.	31.03.2018
7.	M/s. Blue Circle Organics Private Limited, Mumbai	Company is engaged in technology/process development Active Pharmaceutical Ingredients and advance Pharmaceutical Intermediates.	31.03.2018
8.	M/s. Mansoon Seeds Pvt. Ltd., Pune	Company is engaged in research and production of seeds of vegetables and cereals. Company has developed crop varieties like Tomato hy. Vishal, Okra hy. Payal, Bottle gourd hy. Chandani, Cucumber hy. Salini etc	31.03.2017

S. No	Name of Company	Research Area	Validity of recognition
9.	M/s.DCM Engineering Limited, New Delhi	Company's research area is design and development of automotive castings like cylinder heads, cylinder blocks, engine blocks and housings and has developed the products like 4 Bore VNEF Head for 6 Mahindra & Mahindra Ltd., 4000 Series Head for Caterpillar, Centre Housing EPI 65 Flat Body & Axle Core Boxes etc	31.03.2018
10.	M/s.Anand Teknow Aids Engineering India Limited, Pune	Engaged in manufacturing of electro forged gratings, high performance ball valves, carbide cutting tools, metal cutting abrasives and switchgears. R&D has undertaken projects like development of Ball Valves with Extended Stem which can meet the requirements of Fugitive Emission Test, Ball Valves with welded bodies to eliminate leakage from joints etc.	31.03.2017
11.	M/s. Tej Control Systems Private Limited, Thane	Engaged in design and manufacturing of industry automation products such as control panels & control systems. R&D has undertaken the projects like Stemming Machine -Component Assembly Function, Automatic Blending & Dispensing System, Pellet Inspection Machine etc.	31.03.2017
12.	M/s. Loba Chemie Pvt. Ltd, Mumbai	Engaged in manufacturing of Lab Chemicals like aldehyde derivatives, heterocyclic ring containing chemicals, drug intermediates etc. R&D has developed low cost 4-Butyl Ortho phenylene Diamine, 5,5-Dimethyl-1,3-CycloHexanedione (Dimedone), Meta-Phenylene diamine di hydrochloride, N,N - Dimethyl amino cinnamaldehyde etc.	31.03.2018
13.	M/s. Gencor Pacific Organics India Private Limited, Chennai	Engaged in development and commercialization of nutraceuticals and food ingredients. R&D has undertaken projects like evaluation of dietary ingredients from indigenous edible herbal plants, In-vitro, ex-vivo and in-vivo characterization of phyto molecule(s) for neutralizing snake venoms etc.	31.03.2018
14.	M/s. Sika Interplant Systems Limited, Bangalore	R&D of the company has developed anti-submarine warfare (ASW 350) dipping sonar airborne winch system and sub-systems including winch Composite drum, hydraulic manifold block, Printed Circuit Boards (PCBs), Gear box, Spooler shaft, Cable Harness, Aircraft Component and fasteners and process for Magnesium casting & machining for Airborne Gear Box components etc.	31.03.2018
15.	M/s.AnarChemicals Private Limited, Ahmedabad	Engaged in manufacturing of dyes, specialty chemicals and additives. R&D has developed products like AIPCN, ZnPCN, Blue 5000, Blue 4700, PPMT, Solvent Orange 98 Special etc. Company has undertaken projects like development of Tin Phthalocyanine, Naphthol AS-KB, Phenyl thio benzo nitrile (PTBN) and Solvent Red-164 with reduced cost.	31.03.2018
16.	M/s.Unison Pharmaceuticals Private Limited, Ahmedabad	Engaged in manufacturing of pharmaceutical formulation. R&D has developed products like Fdson-Plus Tablets, Glimison -Mp1 Tablets, Glimison-Mp2 Tablets, Forson Sr 1000 Tablets, Controlled Release Matrixing Technology, and Sublingual Technology etc.	31.03.2018

17.	M/s.Ubio Biotechnology Systems Private Limited, Ernakulam	R&D has developed rapid diagnostic test for classical swine fever, rapid diagnostic test for foot and mouth disease, new screen printing technology for glucose biosensor, biochip for cancer screening etc. The company has successfully completed a TePP project on development of biochips.	31.03.2017
18.	M/s.Canara Hydraulics Private Limited, Bangalore	R&D unit of the company has undertaken projects like drawing, design & development of hydraulic cylinders for knuckle boom, Drawing, design & development of hydraulic cylinders for concrete machine etc.	31.03.2018
19.	M/s.Durovalves India Pvt. Ltd., Aurangabad	R&D of the company has undertaken the projects like development of Titanium Valves, alternate surface coating to replace chrome coated valve to nitride valve in 1.3 SDE Fiat Engine etc	31.03.2018
20.	M/s. Murugappa Morgan Thermal Ceramics Ltd., Chennai	Has developed products like superwool plus paper, monomax module system, high strength ceramic fiber board, superwool plus blanket 1200C - process etc. R&D has undertaken projects like development of shroud gasket for sub entry nozzle, development of pumpable & seal coat etc.	31.03.2018
21.	M/s.Lake Chemicals Private Limited, Bangalore	Engaged in manufacture of Ophthalmic and Psychotropic APIs and their intermediates. R&D has undertaken projects like development of Olanzapine Form-I, Triazolam, Fluvoxamine maleate etc.	31.03.2018
22.	M/s Anand NVH Products Private Ltd., Gurgaon	Engaged in design & manufacture of automotive components involving rubber & rubber to metal bonded parts. Undertaken projects like development of technique for air pinhole in synthetic rubber bushes, development of new fixtures for collar bushes to avoid adhesive wastage and to ensure even coating	31.03.2018
23.	M/s Xylem Seeds Private Limited, Hyderabad	R&D has undertaken projects like development of Cotton BollgardII Introgression, development of Cotton line, Cotton hybrid testing etc.	31.03.2018
24.	M/s.Delta Agrigenetics Pvt. Ltd., Hyderabad	R&D undertaken projects like development of test cross hybrids and identification of heterotic combinations in different duration groups, development of new CMS lines with desirable floral characteristics, combining ability and tolerance to major biotic and abiotic stress tolerance etc.	31.03.2018
25.	M/s.Cyient Limited, Hyderabad	R&D of the company has developed Smart Plugs, Dashboard Application, Modbus drivers application, investigating possibilities of full scale development of software applications using augmented reality platform of Google Glass, Virtual Reality Labs etc.	31.03.2018
26	M/s. Devleela Life sciences Pvt. Ltd, Raipur	The company has undertaken projects like collection and characterization of Chironji of Chhattisgarh and Orrisa forest, pilot project on tissue culture development and regeneration of Sheesam etc. Projects are also being supported by DBT.	31.03.2017

Scientific & Industrial Research Organizations (SIROs) Recognized by DSIR during April – June, 2015

Fresh recognition as SIROs was granted by DSIR to following organizations having well-defined research objectives. The recognition is valid up-to 31.03.2017

Natural & applied sciences

S. No	Name of SIRO	Research Area	Validity of recognition
1	Bannari Amman Institute of Technology, Bannari Amman Educational Trust, Coimbatore	Extraction and purification of biomolecules, cloud computing, Synthesis of Nanoliquid Crystalline Materials, Concrete materials, etc.	31.03.2018
2	Gandhi Institute of Technology, Balaram Panda Trust, Bhubaneswar	Study in Nalco Image Processing; Seizure Detection By Pattern Analysis; Effective Supply Chain Management In Sponge Iron Industries; Neural Network Based Congestion Management, etc.	31.03.2018
3	Saraf Institute of Research on Rare Earths and Rare Metals, Kolkata	Separation, extraction and Purification of Rare earth oxides and halides, Rare earth metals and alloys, etc.	31.03.2017
4	Sri Guru Ram Dass Educational Society, Mohali	Standardization of herbal products, Development of novel drug delivery systems, etc.	31.03.2018
5	Telangana State Pollution Control Board, Hyderabad	Water quality assessment of lakes, tanks and rivers including tributaries, Ambient air quality assessment, Hazardous waste characterisation, Preparation of policies for abatement of pollution based on the results, etc.	31.03.2018
6	Vardhaman College of Engineering, Hyderabad	Development of alternate materials for lead based piezoelectrics., smart electric modules, Novel Routing Algorithms, etc.	31.03.2018

Medical Sciences

S. No	Name of SIRO	Research Area	Validity of recognition
1	Artemis Education and Research Foundation, Gurgaon	Development of Biomarker, Early detection and diagnosis of Cervical Cancer, Leukemia, etc; Identification of new strains and genetic variability of Gram negative bacteria.	31.03.2018
2	Chalapathi Institute of Pharmaceutical Sciences, Guntur	Development of Novel drug delivery system, Controlled release formulations, Synthesis of Newer Molecules for microbial infections, Analytical techniques for pharmaceutical formulation, Newer Herbal formulations.	31.03.2018
3	Divya Yog Mandir Trust, Haridwar	Evaluating the psycho-physiological effect of yoga and Ayurveda on Nervous system, Cardiovascular system, Respiratory system, Endocrine system	31.03.2018
4	Dr. Mane Medical Foundation & Research Center, Ahmednagar	Histopathological studies and New treatments combinations for Obstetric and Gynaecological disorders, Orthopedic disorders such as Plantar fasciitis.	31.03.2018

**In house R&D units of Industry approved by DSIR during April- June 2015
for availing Fiscal Incentives u/s 35(2AB) of Income Tax Act, 1961**

Engineering & equipment Machinery

Company	Location	3CM validity
M/s Bio Genex Life Sciences Pvt. Ltd.	Cheripally, Hyderabad	01.04.2014 to 31.03.2017
M/s Hero Cycles Ltd.	Ludhiana	01.04.2014 to 31.03.2016
M/s Mecgale Pneumatics Pvt. Ltd.	Nagpur	01.04.2014 to 31.03.2016
M/s Warade packetech Pvt. Ltd.	Pune	01.04.2013 to 31.03.2015
M/s Unipatch Rubber Ltd.	Gwalior	31.01.2015 to 31.03.2017
M/s Hawa Valves (India) Pvt. Ltd.	Navi Mumbai	25.09.2014 to 31.03.2017
M/s SMR Automotive Systems India	i) Noida & ii) Bangalore	01.04.2014 to 31.03.2016
M/s IAI Joinflex Pvt. Ltd.	Pune	30.05.2014 to 31.03.2015
M/s Kimplas Piping Systems Ltd.	Ambad (Nashik)	01.04.2013 to 31.03.2015
M/s Hero Motocorp Ltd.	Rewari (Haryana)	26.2.2015 to 31.03.2017
M/s Aditya Auto Products & Engineering (India) Pvt. Ltd.	Doddaballapur	30.04.2014 to 31.03.2017
M/s Servall Engineering Works (P) Ltd.	Coimbatore	24.11.2014 to 31.03.2017
M/s TAS Power Tek Pvt. Ltd.	Nashik	28.10.2014 to 31.03.2017
M/s Customized Technologies Pvt. Ltd.	Bangalore	1.04.2014 to 31.03.2017

Healthcare (Pharmaceuticals, Biologics & Medical Devices)

Company	Location	3CM validity
M/s RA Chem Pharma Ltd.	Nacharam, Hyderabad	23.09.2011 to 31.03.2017
M/s D.D. Pharmaceuticals Pvt. Ltd.	Jaipur	25.9.2014 to 31.03.2016
M/s TherDose Pharma Pvt. Ltd.	Gajularamaram village, Hyderabad	01.04.2014 to 31.03.2016
M/s Spansules Pharmatech Pvt. Ltd.	Hyderabad, Telangana	26.12..2014 to 31.03.2016
M/s Medopharm Pvt. Ltd.	Guduvancherry, Chennai	01.04.2014 to 31.03.2016
M/s XL Laboratories Pvt. Ltd.	Bhiwadi, Rajasthan	30.01.2015 to 31.03.2017
M/s Medreich Ltd.	Bangaluru	01.04.2015 to 31.03.2016
M/s Srimi Pharmaceuticals Ltd.	Nalgonda	01.04.2014 to 31.03.2017

Others (Textile, IT etc)

Company	Location	3CM validity
M/s HSIL Ltd.	Bahadurgarh (Haryana)	1.04.2014 to 31.03.2017
M/s Loyal Textile Mills Ltd.	Nellore (A.P.)	30.04.2014 to 1.03.2017

Electronics, System Design and Optical equipments

Company	Location	3CM validity
M/s Unitech Automation Pvt. Ltd.	Pune	01.04.2014 to 31.03.2016
M/s HEG Ltd.	Dist. Raisen (MP)	01.04.2014 to 31.03.2017
M/s Minda Corporation Ltd.	Noida (UP)	01.04.2014 to 31.03.2017

Agriculture & Food Processing

Company	Location	3CM validity
M/s Kaveri Seed Co. Ltd.	Medchal Mandal, Dist. RR, (A.P.)	01.04.2014 to 31.03.2016
M/s T.Stanes & Company Ltd.	Coimbatore	01.04.2013 to 31.03.2016
M/s Pitambari Products Pvt. Ltd.	Navi Mumbai	01.04.2015 to 31.03.2017

DSIR welcomes Feedback/suggestions for improvements. For any specific information on (a) Recognition of in-house R&D centres in industry, (b) Recognition of Scientific and Industrial Research Organisations, PFRI and (c) Fiscal incentives for scientific research and commercialisation of R&D, write to:

Shri K V S P Rao

Scientist 'G' and Head (RDI)
Department of Scientific & Industrial Research
Technology Bhawan, New Mehrauli Road
New Delhi-110 016
E-mail: rdi[at]nic[dot]in; **Telefax:** 011 26529745

Editor –in –chief:

Shri K V S P Rao, Scientist ₤q

Editor:

Shri A V Chainulu, Scientist ₤q

Editorial Team:

Dr Vandana Kalia, Scientist ₤q

Dr Tripta Garg, Scientist ₤q

