COBIK
Center odličnosti za biosenzoriko, instrumentacijo in procesno kontrolo
Laboratorij za krmilne sisteme

Naložba v vašo prihodnost
OPERACIJO DELNO FINANCIRA EVROPSKA UNIJA
Evropski sklad za regionalni razvoj

Contacts with Fullerene Manufacturers

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1 List of Fullerene manufacturers

Table 1: Fullerene manufacturers.

Company	Link	Address/Contact	Products	Fullerene Reactor	Remarks
MER Corporation (USA)	http://www.mercorp.com	Materials and Electorchemical Research MER Corporation 7960 South Kolb Road Tuscon, Arizona 85706 Phone (520) 574 1980	Fullerenes Nanotubes Aluminium Graphite C-C Composites Spinel	Yes	MER also offers analytical services and can construct fullerene reactors with a wide variety of capacities and automated features RESEARCH
BuckyUSA (USA)	http://buckyusa.com/index.htm	713-777-6266 from 9:00 am to 5:00 pm CST sales@buckyusa.com	Pure Fullerenes Modified Fullerenes Carbon Nanotubes		
Nano-C (USA)	http://www.nano-c.com	33 Southwest Park Westwood, MA 02090 T: 781-407-9417 F: 781-407-9419 E: nanocinfo@nano-c.com	Fullerenes Fullerene derivatives Nanotubes		The founder is a professor from MIT: Jack B. Howard RESEARCH
SES Research (USA)	http://sesres.com/index.asp	SES Research, 5999 West 34th, Suite 106 Houston, TX 77092 USA Tel. (713) 686-9662 Fax. (713) 686-9635 1-800-275-0082 Gnow.Info@sesres.com	Fullerenes Metallofullerenes Nanotubes PCBM		RESEARCH
Center for Irradiation of Materials	http://cim.aamu.edu/CIM/research/m_process/material_processing.htm	Center for Irradiation of Materials Alabama A&M University	Nanotubes Fullerenes	Yes	http://cim.aamu.edu/Activities/fullerene.html

(USA)		P.O. Box 1447 Normal, Alabama 35762-1447 Voice (256) 372-5866 infoseek@cim.aamu.edu			INSTITUTE
High-Performance Materials Institute (USA)	http://www.fsu.edu/ http://www.hpmi.net	W. Frank Allen Operations Director High-Performance Materials Institute Florida State University Materials Research Building 2005 Levy Ave. Tallahassee, FL 32310 fallen@fsu.edu 850-645-8984 Cell 850-694-1125	Nanotubes Fullerenes	Yes	INSTITUTE Bojan Senčič je obiskal ta inštitut.
New York University NYU Fullerene Group (USA)	http://www.nyu.edu/ http://www.nyu.edu/projects/schuster/people/schuster/index.html	David I. Schuster Professor of Chemistry, Ph.D. 1961 Department of Chemistry New York University 100 Washington Square East New York, NY 10003 Tel: (212) 998-8447 E-mail: david.schuster@nyu.edu	Fullerene		INSTITUTE
Strem Chemicals, inc (USA)	http://www.strem.com http://www.strem.com/catalog/gl/12/carbon	7 Mulliken Way Newburyport, MA01950 (800) 647 8736 info@strem.com	Fullerene Nanotubes Pouders		RESEARCH & DEVELOP & SELLS A lot of materials.
Nanostructured & Amorphous Materials	http://www.nanoamor.com/home	Nanostructured & Amorphous Materials, Inc. 16840 Clay Road, Suite #113	Nanotubes Fullerenes		RESEARCH

(USA)		Houston, TX 77084 USA			
The University of Southern Mississippi Department of Chemistry and Biochemistry (USA)	http://www.usm.edu http://www.usm.edu/chem/Equipment.html	The University of Southern Mississippi 118 College Drive #5043 Hattiesburg, MS 39406-0001 voice: (601) 266-4701	Fullerene	Yes	INSTITUTE http://www.usm.edu/chem/PDF/Phillips-Stevenson%20facilities.pdf
Materials Technologies Research (USA)	http://www.mtr-ltd.com/index.html	6108 Whiteford Drive Cleveland, OH 44143, USA Sales@mtr-ltd.com (440) 646-1051	Fullerenes	Yes	RESEARCH
Reade (USA)	http://reade.com/ http://reade.com/products/70-nanotubes-swnts-dwnts-mwnts-va-mwnts-twnts/74-buckyball-fullerene-buckminsterfullerene-metalofullerenes-carbon-soot-nanotubes-buckytubes	Post Office Drawer 15039 850 Waterman Avenue Providence, Rhode Island USA 02915-0039 +1.401.433.7000	Nanotubes Fullerenes …		RESEARCH & DEVELOP & SELLS
Frontier Carbon Corporation (JAPAN)	http://www.f-carbon.com	Ku, Kitakyushu, Fukuoka 1-1 Yahatanishi	Fullerenes Nanotubes		
Fullerene Centre (RUSSIA)	http://www.fullerene-c.com/main.html	Joint stock company “Fullerene center” 4, Kostina str. 603000 Nizhny Novgorod 36, Pushkin str.	Fullerenes Fullerene derivatives		INSTITUTE Links of other institutes in Russia

		606540 Chkalovsk, Nizhny Novgorod region Phones: +7 831 430-20-32, +7 831 430-03-28, +7 831 430-15-67, Fax: +7 8312 30-39-36 Email: rld@fullerene-c.com info@fullerene-c.com, kvl@fullerene-c.com kvl.59@mail.ru			
Petersburg Nuclear Physics Institut (RUSSIA)	http://www.pnpi.spb.ru/ http://nrd.pnpi.spb.ru/science/menu_science.html	PNPI RAS Gatchina, Leningrad district 188300, Russia. Tel. +7(813-71) 46025, +7(813-71) 46047 fedorova@pnpi.nw.ru			http://nrd.pnpi.spb.ru/pdf/METALLOFULLERENES.pdf INSTITUTE
ILIP (RUSSIA)	http://www.ilip.ru	Sankt Peterburg, Instrumental Str., 6 +7 (812) 234-2731, 234-9859 post@ilip.ru	Fullerene		RESEARCH
NeoTechProduct Research & Production company (RUSSIA)	http://www.neotechproduct.ru	NeoTechProduct Research & Production Company, Ltd. 1, lit A2, Fabrichnaya St., Peterhof, Saint Petersburg, 198510, Russia +7 (812) 365-41-61 fullerenes@neotechproduct.ru	Fullerene		
Leibniz Institute for Solid State and Materials Research Dresden (GERMANY)	http://www.ifw-dresden.de/ http://www.ifw-dresden.de/institutes/iff/research/Carbon/fullerenes/production-and-separation	Leibniz Institute for Solid State and Materials Research Dresden PF 27 01 16 D-01171 Dresden +49 (3 51) 46 59-0 IFW Dresden	Fullerene	Yes	INSTITUTE

		Helmholtzstraße 20 01069 Dresden Germany +49 351 4659 660 L.Dunsch@ifw-dresden.de			
Aixtron (GERMANY)	http://www.aixtron.com/index.php?id=1&L=1	AIXTRON SE Kaiserstr. 98 52134 Herzogenrath Germany Phone +49-241-8909-0	Nanotubes		RESEARCH & DEVELOP & SELLS
TCI Europe (BELGUM)	http://www.tcieurope.eu/en/product/materials-chem/	Boerenveldseweg 6 - Haven 1063 2070 Zwijndrecht Belgium +32 (0)3 735 07 00 sales@tcieurope.eu	Nanotubes Fullerenes		The founder of TCI is Tokyo Chemical Industry.
The University of Warwick (UK)	http://www2.warwick.ac.uk/ http://www.warwick.ac.uk/staff/M.P.Barrow/fullerenes.html	The University of Warwick Coventry CV4 7AL, UK Tel: +44 (0)24 7652 3523			INSTITUTE
Understanding Nano	http://www.understandingnano.com/	earl@understandingnano.com	Nanotubes		
Istituto di Struttura della Materia (ITALY)	http://www.area.trieste.it/opencms/opencms/area/en/ http://www.ism.cnr.it/ http://www.ism.cnr.it/linee/DG.RSTL.087.005.php	La sede ISM di Tor Vergata si trova all'interno dell'omonima Area della Ricerca C.N.R., situata tra l'Università di Roma 2 e Vermicino, in Via del Fosso del Cavaliere, 100. Direzione - dr. Dino Fiorani: 06 45488155 Segreteria Generale Direzione: 06 45488173 Segreteria Amministrativa: 06 45488476	Nanotubes		INSTITUTE

		e-mail: istituto@ism.cnr.it			
Cometox (ITALY)	http://www.fullerenes.it/index.html	COMETOX srl Via XX settembre, 9 20080 Zibido San Giacomo (MI) Italy +39 02 90003777 cometox@nanoprodotti.it	Fullerene		Some usefull links for Italian market.
MARCHETTI srl (ITALY)	http://www.marchettisrl.eu/index.php http://www.marchettisrl.eu/pdf/products%20tech%20sheet.03.pdf	**Marchetti srl** Via del Progresso, 8/1 35014 Fontaniva (PADOVA)	Fullerene C90 Fullerene C60 …		
Yonxin (CHINA)	http://www.fullerene.com.cn/product.html	Wang Yongjun Cell phone: +86-13700803721 Phone: +86-393-4681875 wyjc60@yahoo.com.cn	Fullerene		RESEARCH & DEVELOP & SELLS

2 List of nanopouder manufacturers

Table 2: Nanopouder manufacturers.

Country	Company name	Internet site
USA		http://www.kennametal.com
SWEDEN		http://www.smt.sandvik.com
GERMANY		http://www.widia.com
		http://www.guhring.com/
		http://www.boartlongyear.com
JAPAN		http://www.sumicarbide.com/
ISRAEL		http://www.iscar.com

3 Useful links for Fullerenes and Nanotubes

Table 3: Useful pages.

Name	Internet site
The Nanotube Site	http://nanotube.msu.edu/
Nanotech 2011	http://www.nanotechexpo.jp/en/index.html#
Fullerene simposium	http://fullerene-jp.org/en/main21_news.html
Fullerene-Nanotubes Research Association	http://fullerene-jp.org/webe/entrancee.html
Area SciencePark Trieste	http://www.area.trieste.it/opencms/opencms/area/it/
Synchrotron Elletra	http://www.elettra.trieste.it/
The design of a fullerene generator	http://www.creative-science.org.uk/design.html
	http://www.creative-science.org.uk/main.html

4 Templates

4.1 Template letters

Below there are some templates that can help you when sending introduction letters to persons and institutions with whom you would like to establish contacts and suggest collaboration or common activities.

4.1.1 Letter for Production Companies

Subject: **Proposal for collaboration**

Dear Sir<-s, Madam, Mr./Mrs./Dr./Prof. Xx>,

I have learned <from ... – name sources> that you are involved in production of carbon nanomaterials <carbon nanotubes / fullerenes <in plasma arc cells> ...>. I was impressed by presentation of your products and services <etc. – name concrete achievements of the other side that attracted your attention>.

I would like to inform you about R&D activities of our research group at the Centre of Excellence for Biosensors, Instrumentation and Process Control. As a part of the Laboratory for Advanced Materials Systems, we work in the field of numerical modeling and optimization of production of carbon nanomaterials in plasma arc reactors. We intend to develop a thorough simulation software based on meshless simulation techniques and coupled with chemical kinetics and other crucial modules. The module will be connected to an optimization environment suitable for dealing with complex industrial problems.

Our group is strongly linked with the Laboratory for Multiphase Processes of the University of Nova Gorica, which possesses long term experience in application of meshless techniques in numerical modeling of fluid flow, heat transfer and phase transition processes at multiple scales. Our development work is industry oriented, and we currently have at our disposal advanced numerical models of fluid flow with mass and heat transfer, a development-stage module for chemical kinetics of systems with larger number of components and reactions with high variations in dynamics, an approximation module based on neural networks, and foundations of optimization environment.

We are interested in establishing a long term partnership with your company, where we would provide you with support in terms of accurate physical models, numerical modeling and optimization of your production process. Also desirable form or point is eventual cooperation in research initiatives in the field, and providing links with potential consumers of your products (especially in the steel and aluminum producers, where the other part of our laboratory has active connections and undertakes research in improvement of mechanical and chemical properties by addition of nanoparticles). We are committed to development of industry - standard software tools for simulation of fullerene <nanotubes/carbon nanomaterials, etc.> production, and we believe that collaboration with a highly renowned global player on the marked is indispensible for achievement of our goals. Along with market-based part of funding of our R&D activities, such collaboration

would be crucial for us to keep in touch with current problems in practical production and processing of fullerene < nanotubes/carbon nanomaterials, etc.>.

If you are interested in collaboration with our laboratory, I would suggest to make further steps and identify eventual areas that are interested for our collaboration. <eventualy propose some areas or activities> <We have allocated a small traveling budged and could make a short visit to present ourselves and discuss matters in detail.>

Yours sinceerly,
<Yy Zz>

4.1.2 Letter for Research Institutions

5 Proposed plan of activities for establishing contacts

- Make a plan with milestones for numerical model of production cell (mainly Katarina)
  - Dates
  - Expected capabilities of the model at the specified stages
- Continue work on neural networks
  - Tadej has to fulfill Ph.D. crtiteria + write produce some papers
  - As much as possible, concentrate on algorithms for sampling & error analysis
  - When model of the cell is in appropriate stage, try to immediately employ it to generate data for neural network – based models.
- Work on optimization (Igor)
  - Intensify work here (try to reduce other things)
  - Work with available models (e.g. Robert, Umut, etc., external groups)
  - Look for contacts for optimization in broader area
  - Apply to fullerenes when model is ready
- Conferences:
  - In conference on nanomaterials, fullerenes, etc., look for people from research groups & companies with production capabilities, talk to them, get contact data, promote what we want to do, agitate interest for collaboration
- Exploit existing possibilities. Coordinate with Radovan Grapulin who is active in searching for contact, to also seek possibilities for owners of research or production cells
- Make visits where contacts are hot. Schedule systematic contacts and visits to points when milestones are met – visit & present results (mainly Katarina).

6 Activities and Progress Reports with Contact Information

6.1 Contacts with Institutions

6.1.1 Mintek & University of Cape Town, South Africa

Contact data:

Quinn G. Reynolds, quinnr@mintek.co.za, PyroMetallurgy Division, Mintek, Private Bag X3015, Ranburg 2125, South Africa. http://www.mintek.co.za/Pyromet.

B. Daya Reddy, daya.reddy@uct.ac.za, Centre for Research in Computational and Applied Mechanics (CERECAM), University of Cape Town, Private Bag X3, Rondebosch 7701, South Africa, http://www.cerecam.uct.ac.za.

Background:
Met by B. Šarler at »Coupled problems 2011«. Information provided was that they are involved in building equipment for fullerene production. In fact, core business of PyroMetallurgy Division of Mintek is metallurgical furnaces for melting of steel with plasma arc, and they collaborate with the lab at Capetown university. They might have long term interest in getting into fullerene production business.

Links on their paper:

http://www.mintek.co.za/Pyromet/Files/2011Reynolds-CoupledProblems.pdf
http://congress.cimne.upc.es/coupled2011/frontal/ProgSesion.asp?id=36

6.1.2 Deveaux (contacted by B. Šarler)

6.1.2.1 From Mail:

-------- Original Message --------
Subject: CONTACT NANOMETARIALS
Date: Mon, 03 Oct 2011 13:06:52 +0200
From: Božidar Šarler <bozidar.sarler@ung.si>
Reply-To: bozidar.sarler@ung.si
Organisation: University of Nova Gorica
To: xavier.devaux@ijl.nancy-universite.fr
CC: Miha Zaloznik <miha.zaloznik@mines.inpl-nancy.fr>

Dear Dr. Deveaux,

I got your contact details from Dr. Miha Založnik, my former Ph.D. student, who cointacted you by the phone last week.

I would like to approach you because Miha told me that you are involved in nanomaterials and most possible also in the problems we are tackling currently.

We recently got a project untill 31.12.2013, cofunded by the EU with respect to building up a computational
model, based on physical modelling (couped, heat, mass, momentum, chemical reactions) and artificial intelligence modelling (neural networks)
for arc-discharge cell for production of carbon nanotubes and fullerenes. The total amount of the foreseen funding from our side for the task is 4 man/year.

We originally expected that we would have such a cell in Slovenia at the end of 2010, but it did not work out and it is also very unlikely to have it untill the end of the project.

In order to keep our project goals sound, we are keen to find a partner which already possesses such a cell, and has some experimental data which we could use for training our artificial intelligence model and validate our physical model.

The collaboration outside Slovenia for this purpose is also beneficial because we are than more flexible with possible future subsequent applications for EU funding.

With this respect I would like to kindly ask you for an echo if you maybe have such a cell and would be keen to collabarate. Other details can than be agreed in our futher contacts. A list of our publications is on the link:

http://sabotin.ung.si/~sarler/sarler_papers/

With kind regards and looking forward to hearing from you,

Bozidar Sarler

References:

[1]

[2]

[3]