THE GRI ARTWORK BOOK

FOREWORD

We all have talents that are valuable to us personally.

Given the times, we are often quite busy with our work activities that we don't get to express our other talents.

This publication is an anthology of the creativity and artistic aptitudes of faculty members, students, postdocs and staff at the University of Calgary.

Each creation unearths and celebrates their talents.

Please join us on this beautiful journey to discover the hidden talents of our University Community.

Enjoy!

The GRI Team

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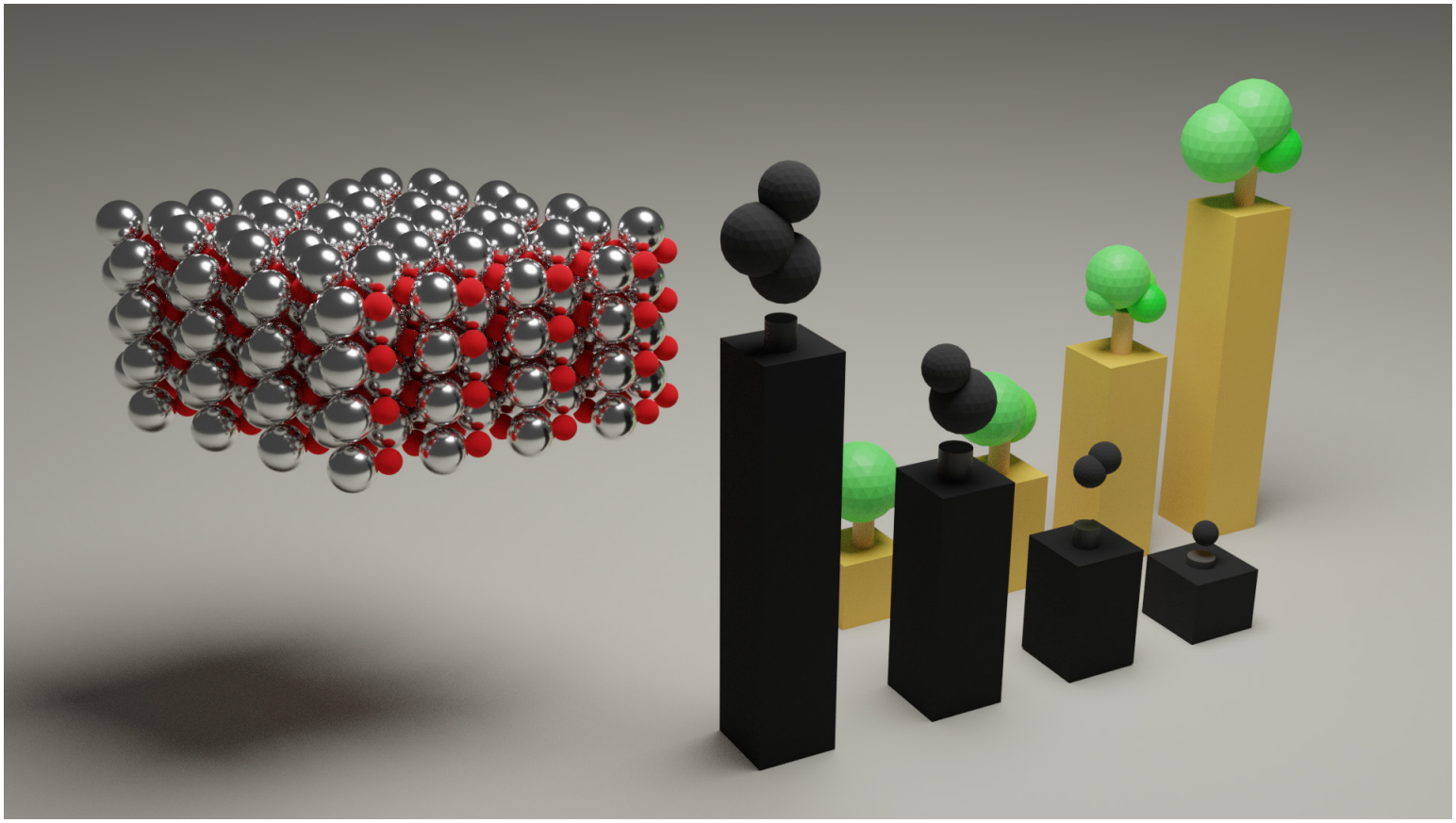
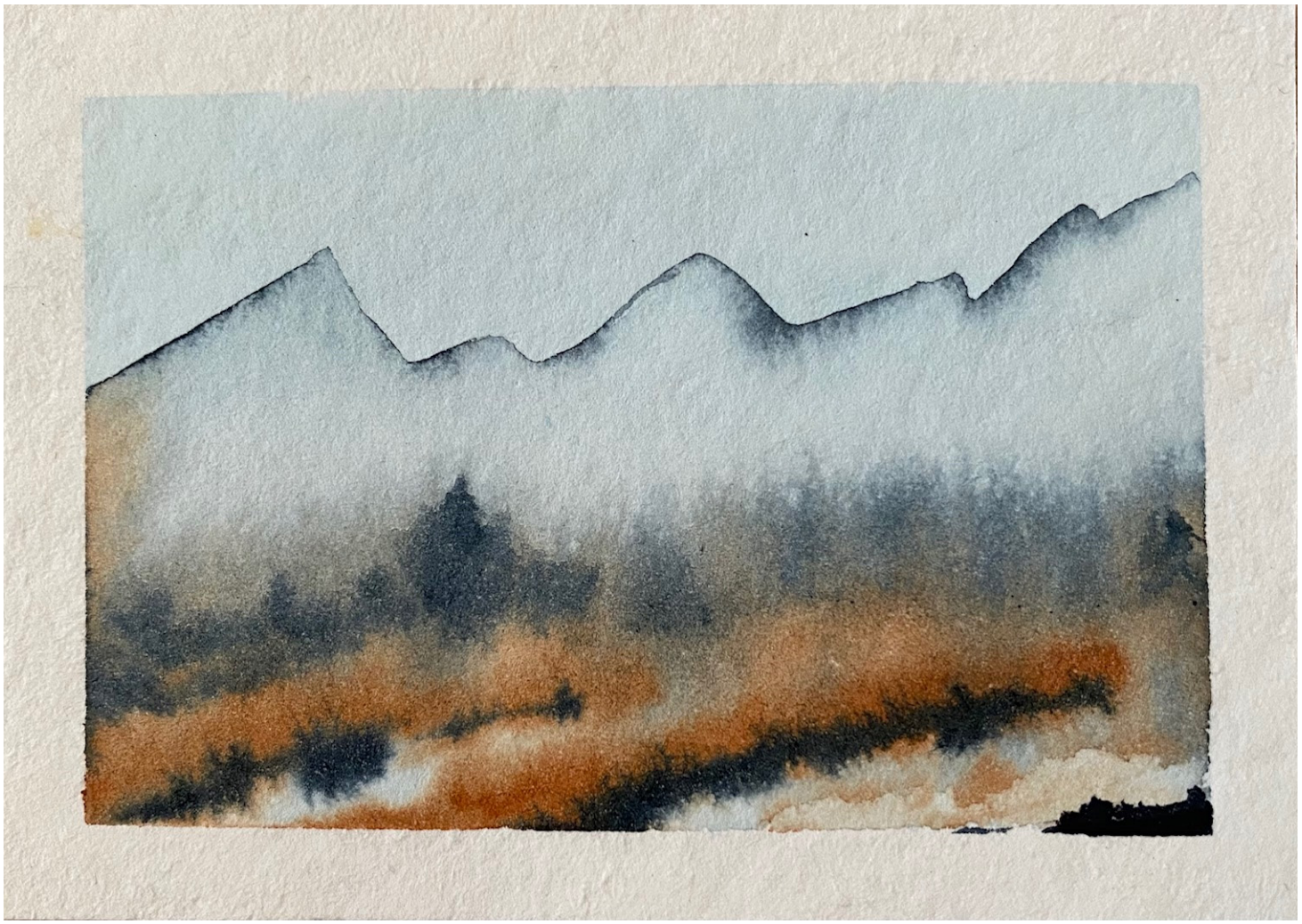


“CATALYSIS FOR GREEN ENERGY”

AMIR MOSTAGHIMI

PhD student, Department of Chemistry

“My work is on heterogenous catalysis for clean energy and this figure describes my objective.”



"TINY MOUNTAINS 1"

BONNIE SHAPIRO, PhD

Faculty Professor, Werklund School of Education

“TINY MOUNTAINS 2”

BONNIE SHAPIRO, PhD

Faculty Professor, Werklund School of Education

"TINY MOUNTAINS 3"

BONNIE SHAPIRO, PhD

Faculty Professor, Werklund School of Education

"A SUMMER NIGHT IN CALGARY"

BROOKS DECILLIA, PhD

Postdoctoral Researcher, Department of Political Science

“THE BLUE BOW”

BROOKS DECILLIA, PhD

Postdoctoral Researcher, Department of Political Science

UNTITLED

CATHRYN RYAN, PhD

Professor, Department of Geoscience

"Pandemic afghan knitting sees me through zoom days.
All mistakes are carefully archived.
Knitting is so forgiving."

“WASCANA LAKE”

DI (DINO) PU

MSc student, Department of Chemical & Petroleum Engineering

“THE FALLEN CITY”

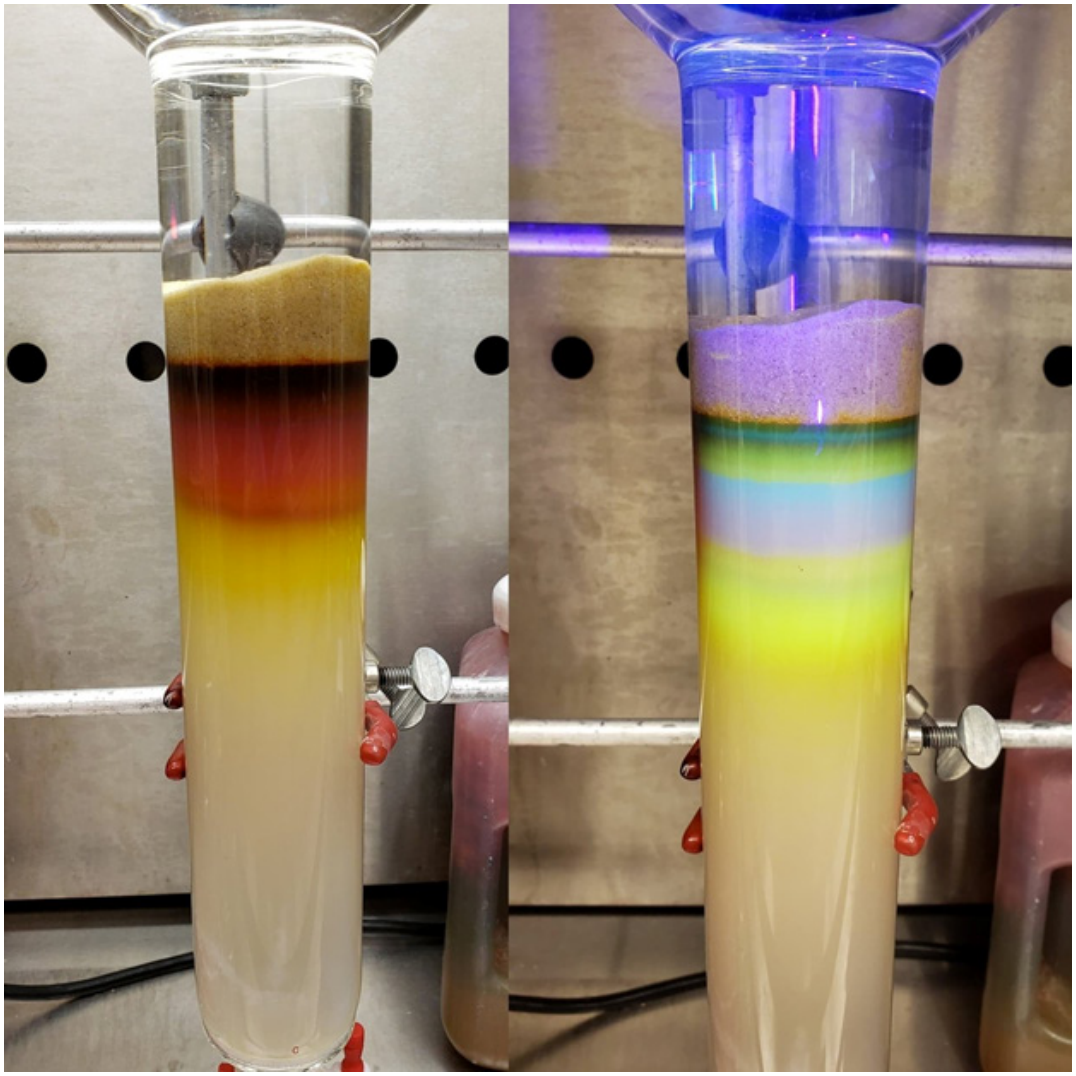
DI (DINO) PU

MSc student, Department of Chemical & Petroleum Engineering

“LA GIRAFFA”

DI (DINO) PU

MSc student, Department of Chemical & Petroleum Engineering

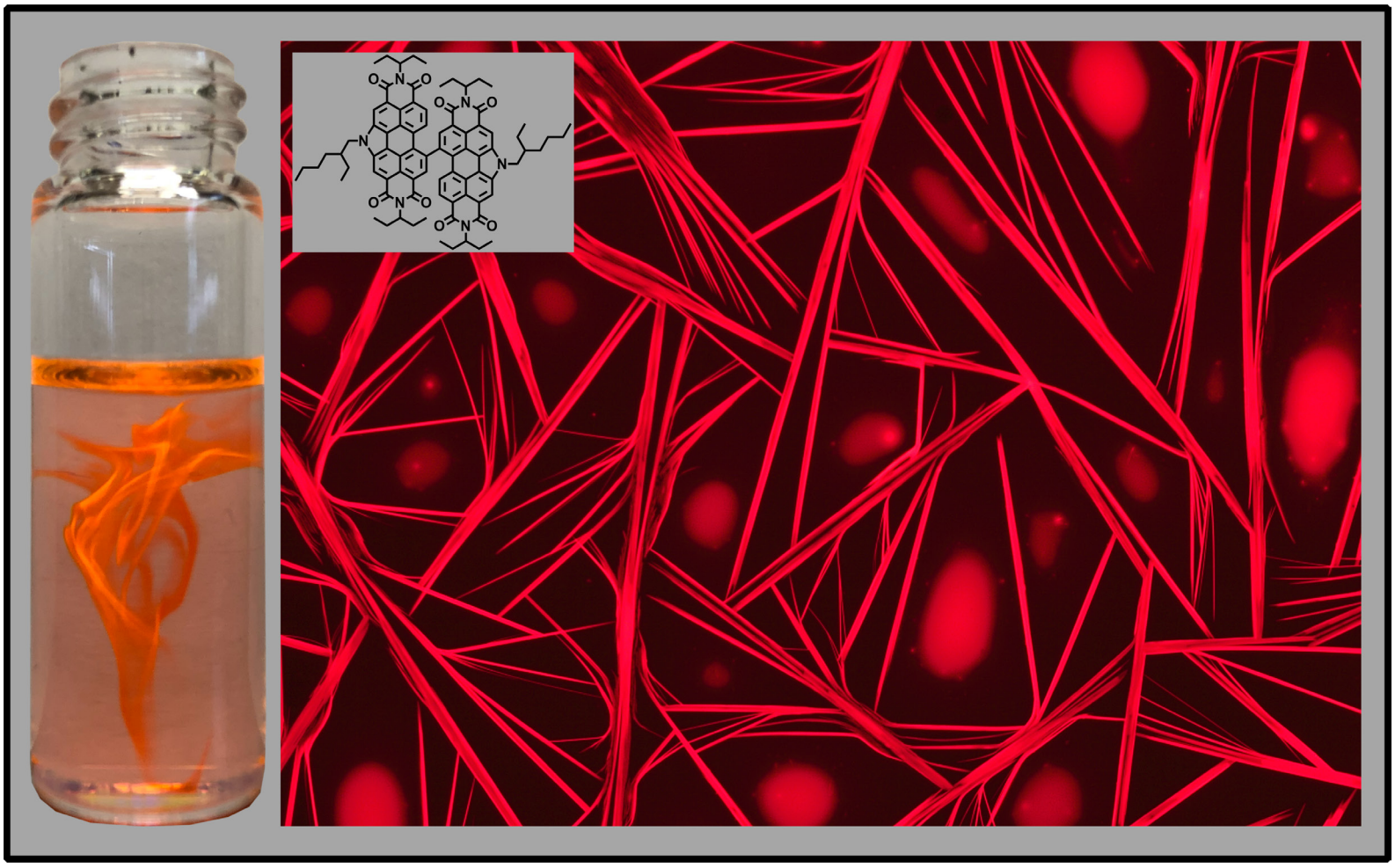


UNTITLED

EDWARD CIEPLECHOWICZ

PhD student, Department of Chemistry

"A side-by-side image of a reaction being separated via silica gel column chromatography. The image on the left in illuminated by light from a fluorescent bulb emitting light with visible spectrum. The image on the right in illuminated by 395 nm ultraviolet light causing the material to fluoresce and emit specific colours base on the chemical structure allowing us to visualize the material separation."



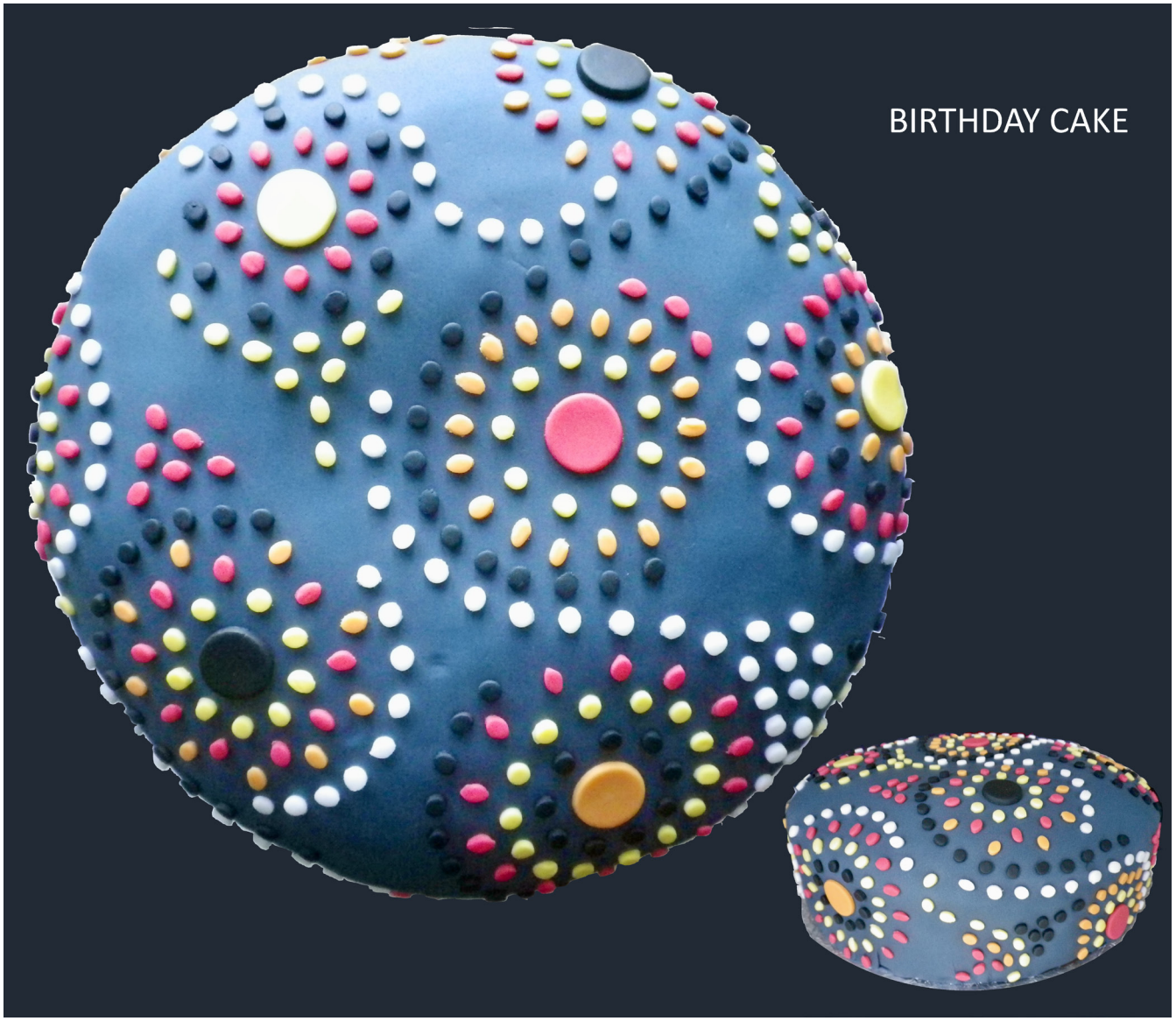
“DISPERSION AND CRYSTALLIZATION OF A SEMICONDUCTING TEXTILE DYE”

GREGORY WELCH, PhD, FRANCESCO TINTORI AND GREG BANNARD

Francesco Tintori and Greg Bannard are PhD and MSc students, respectively, in the Functional Materials and Advanced Coatings Laboratory.

Gregory Welsh is a Professor at the Department of Chemistry.

“The dye has been featured as the photoactive component in flexible light filters and plastic photovoltaics used to enhance Algae production – GRI Theme 3 Bioenergy.”



“BIRHTDAY CAKE”

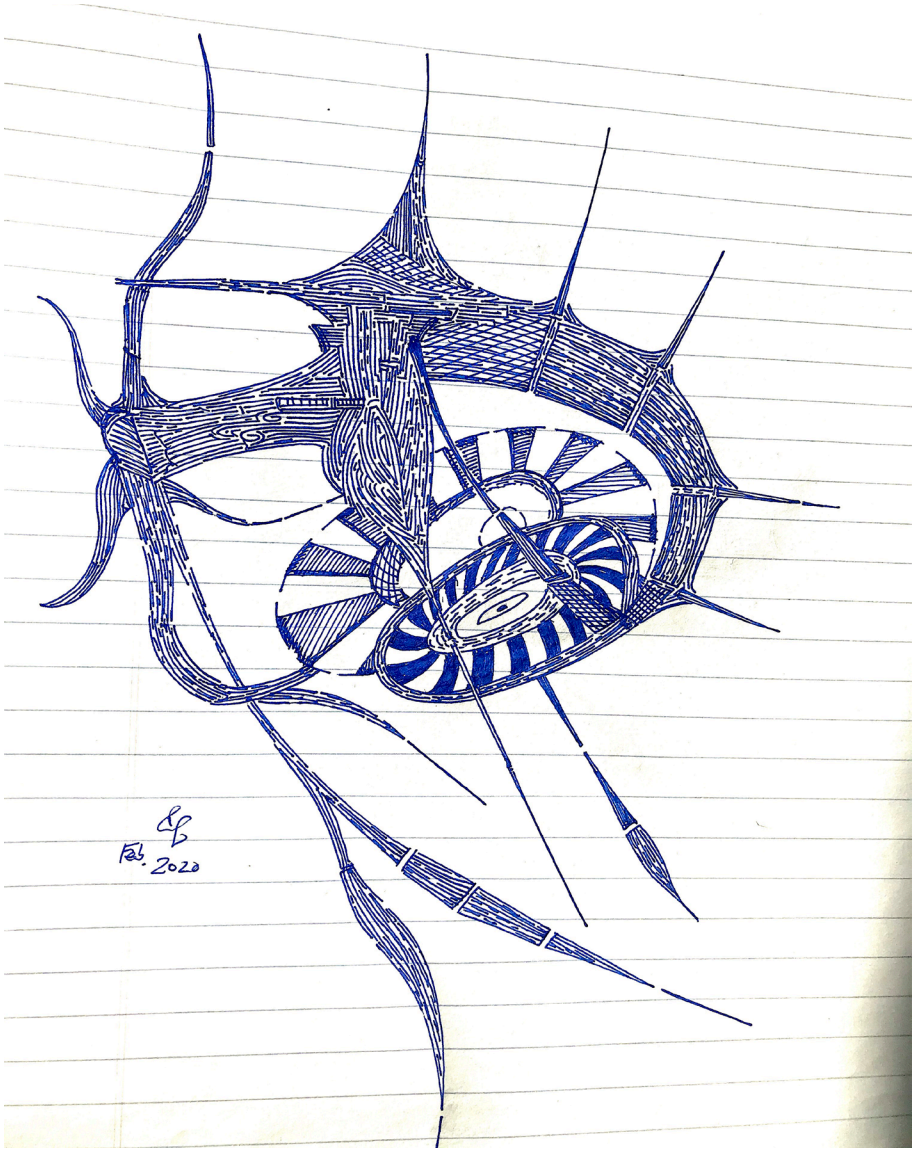
HELEN PINTO

Postdoctoral Associate, Hydrogen generation,
Department of Geomatics Engineering

“FACE MASK”

HELEN PINTO

Postdoctoral Associate, Hydrogen generation,
Department of Geomatics Engineering



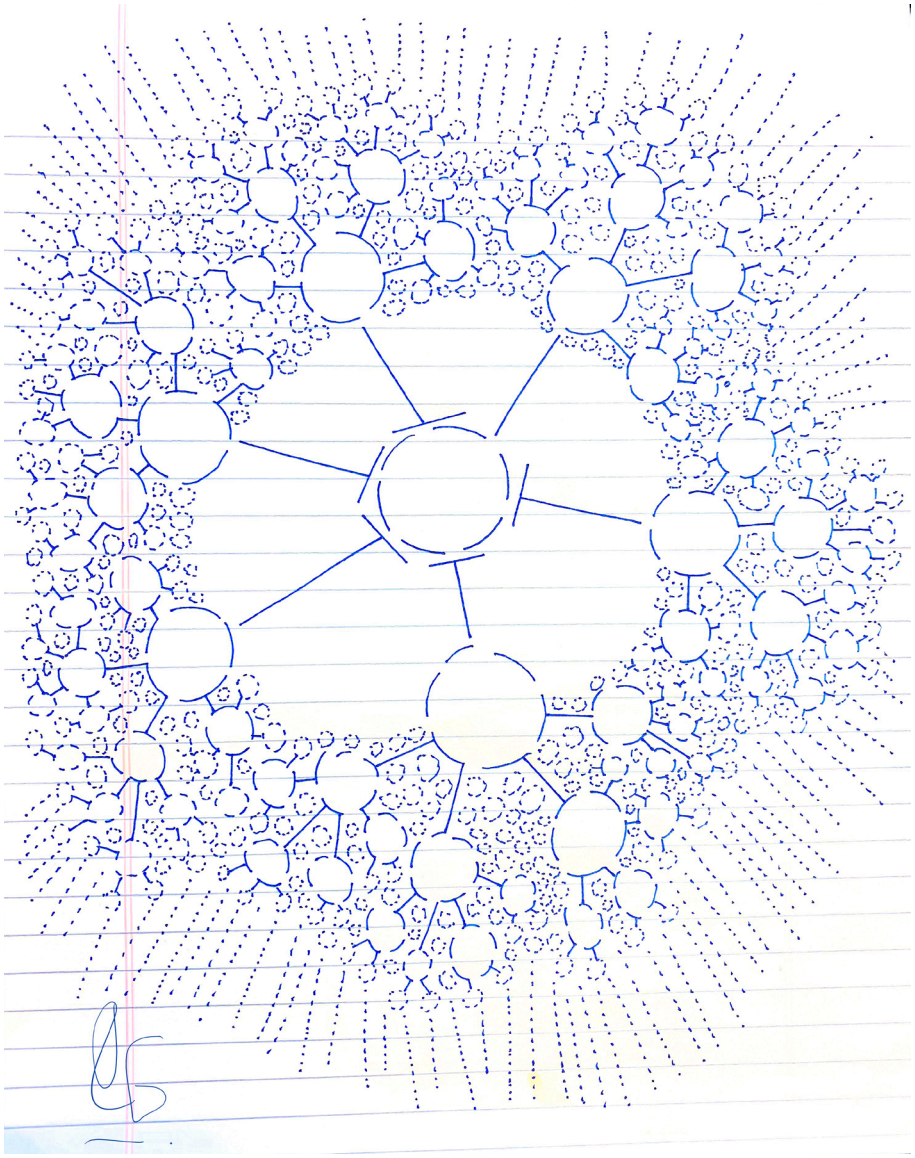
“DOODLES FROM MEETINGS 1”

IAN GATES, PhD

Professor, Department of Chemical and Petroleum Egineering

Director of the Global Research Initiative

Sustainable Low Carbon Unconventional Resources



“DOODLES FROM MEETINGS 2”

IAN GATES, PhD

Professor, Department of Chemical and Petroleum Egineering

Director of the Global Research Initiative

Sustainable Low Carbon Unconventional Resources

"FALL GLORY ON THE BOW VALLEY PARKWAY"

JENNIFER WINTER, PhD

Associate Professor, School of Public Policy

"FALL GLORY ON THE BOW VALLEY PARKWAY"

JENNIFER WINTER, PhD

Associate Professor, School of Public Policy

“SCARF 1”

JOYCE SIMOES

Finance Coordinator, Global Research Initiative in Sustainable Low Carbon Unconventional Resources (GRI)

"SCARF 2"

JOYCE SIMOES

Finance Coordinator, Global Research Initiative in Sustainable Low Carbon Unconventional Resources (GRI)

“NOT THE END”

JUAN DE LA FUENTE, PhD

Postdoctoral Associate, Department of Chemical & Petroleum Engineering

"BAGELS"

KATHERINE PARKER

Project Coordinator, Global Research Initiative in Sustainable Low Carbon Unconventional Resources (GRI)

“GARDENING”

KATHERINE PARKER

Project Coordinator, Global Research Initiative in Sustainable Low Carbon Unconventional Resources (GRI)

“FLOWERY SUNSET”

LALEH KHADANGI

PhD student, Department of Geoscience

Picture taken in City of Perth, Australia

“GHOST TOWN”

LALEH KHADANGI

PhD student, Department of Geoscience

Picture taken in Gwalia Town, Australia

“DOUBLE RAINBOW OVER FRS BROOKS”

MAURICE SHEVALIER

Research Associate, Department of Geoscience

Picture taken at the CMC FRS in Brooks, AB.

"BE ALIVE IN SOMEONE'S HEART"

MD MOHOSIN RANA

PhD student, Department of Biomedical Engineering

Picture taken in Little Elbow River, AB

Device: Nikon D3300

Lens: AF-S DX NIKKOR 18-55mm f/3.5-5.6GII

Detail info: Focal length: 48mm; f/5.6; Exposure time: 1/125; Color space: RGB

"LIVE LIFE IN FULL BLOOM"

MD MOHOSIN RANA

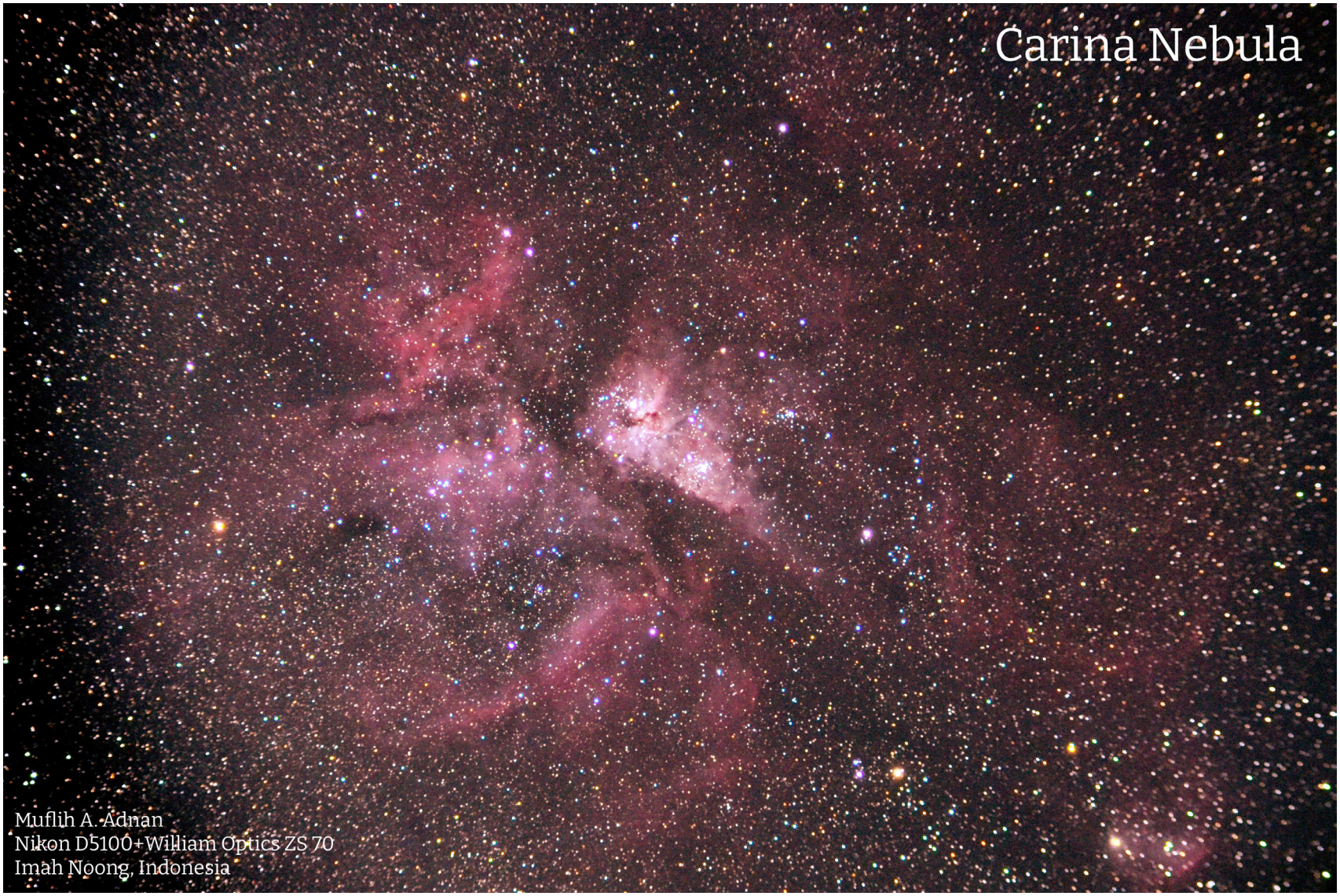
PhD student, Department of Biomedical Engineering

Picture taken in Sports Field, University of Tsukuba, Tsukuba, Ibaraki, Japan

Device: Nikon D3300

Lens: AF-S DX NIKKOR 18-55mm f/3.5-5.6GII

Detail info: Focal length: 48mm; f/5.3; Exposure time: 1/640; Color space: RGB



“CARINA NEBULA”

MUFLIH ADNAN

PhD student, Department of Chemical & Petroleum Engineering

“ORION NEBULA”

MUFLIH ADNAN

PhD student, Department of Chemical & Petroleum Engineering

“FLOWERS”

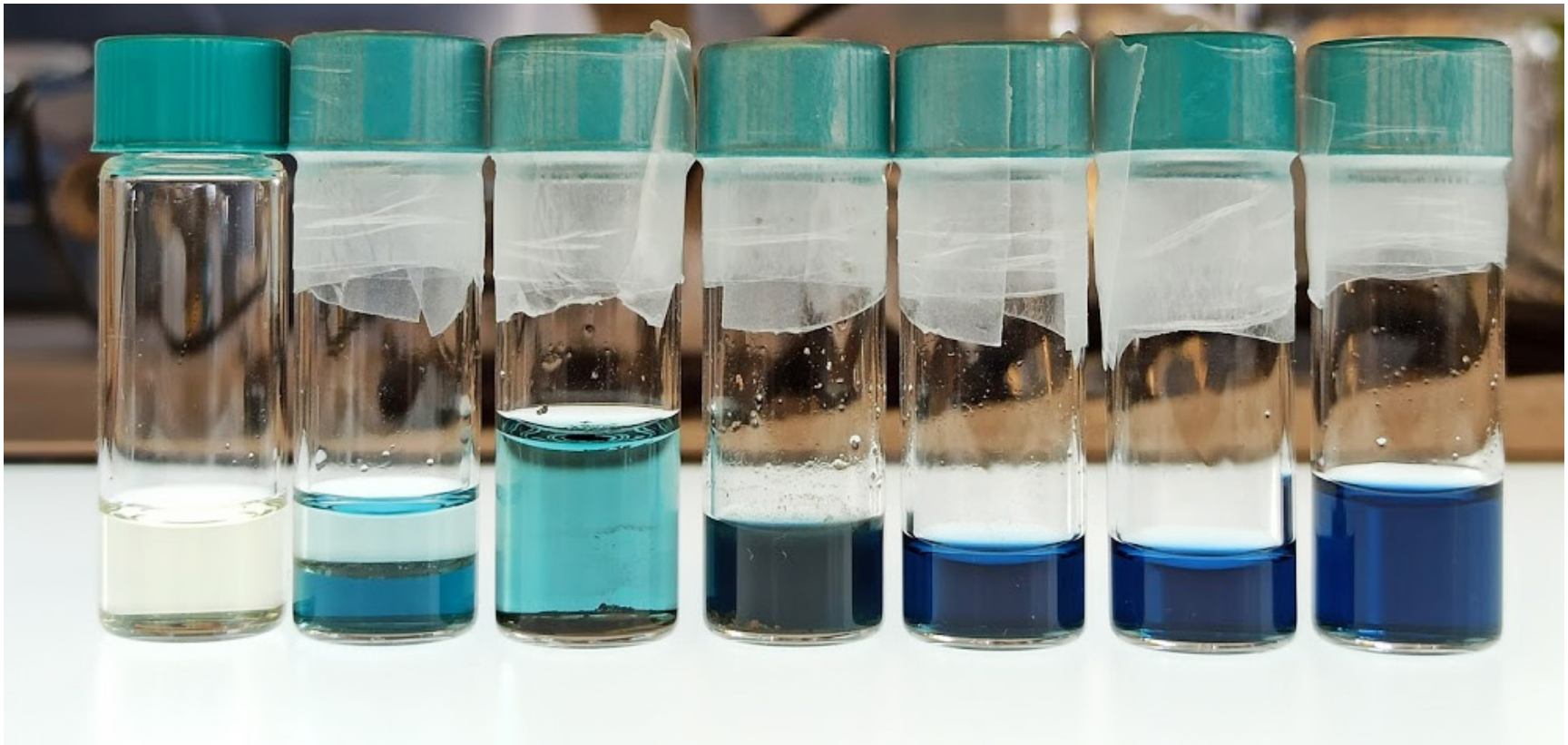
PARISSA MIRJAFARI, PhD

Research Associate, Department of Chemical & Petroleum Engineering

UNTITLED

PARISSA MIRJAFARI, PhD

Research Associate, Department of Chemical & Petroleum Engineering



“5 SHADES OF BLUE”

RAHIM MUNIR, PhD

Postdoctoral Fellow, Department of Chemistry

“VEINS OF ORGANIC SEMICONDUCTORS”

RAHIM MUNIR, PhD

Postdoctoral Fellow, Department of Chemistry

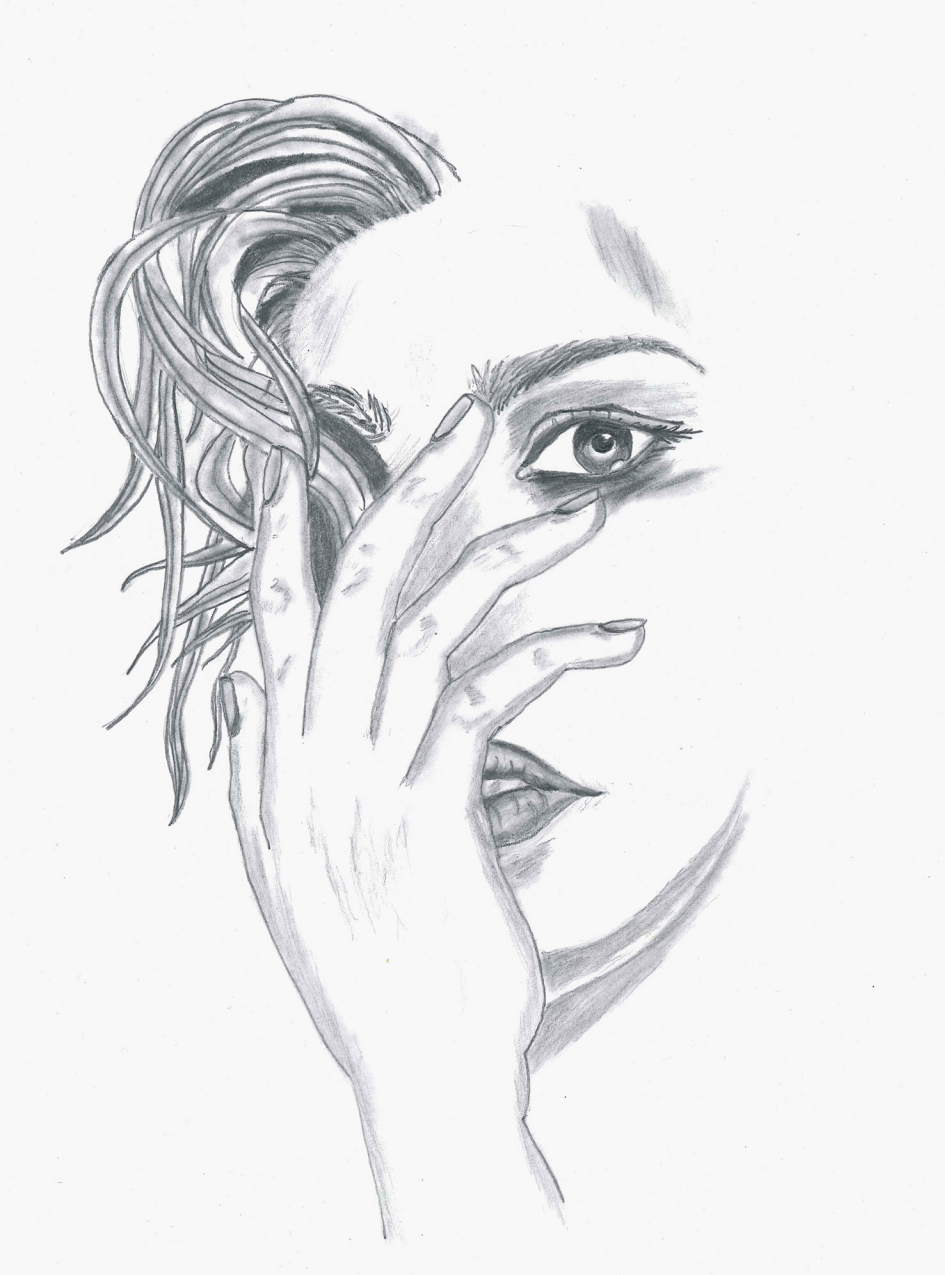
SESSAREGO 2021

“DECODERS OF SCIENCE”

SEBASTIAN SESSAREGO

Research Associate, Department of Chemical & Petroleum Engineering

Use your phone to scan the QRCode images!



"THE HIDDEN"

SENTHIL VELAN VENKATESAN, PhD

Postdoctoral Researcher, Department of Chemical & Petroleum Engineering

“THE UNCONQUERABLE”

SENTHIL VELAN VENKATESAN, PhD

Postdoctoral Researcher, Department of Chemical & Petroleum Engineering

Hatt Brennende Dag

- "Did you stock up with the beer?"
- "What for?"
- " The 'hat burning day' party, of course!"
- "Oh, we're still celebrating that? I thought they stopped that back in the 50's."
- "Its some special anniversary or something!"

The Norwegians were the first to hack the universities. Gone were the siloed departments and faculties, tenured aristocracy and medieval trappings of the late 20th and early 21st century universities. Gone, were the huge administrations, classrooms and mass classes and gone too, were the postdocs! No longer were they a disenfranchised group of wandering moaners, now they ran the place!

- "Let me check what time it starts, I want to have a new jacket 4D-phase printed for it, that new symbiont will be online", said Milo.

He turned on the retina screen, and a captcha popped up
- "Are you just a human? Choose all evidence compatible with a 4.5-billion-year age for the Earth"
- "Damn, I forgot to turn Joy on!".

Joy initialized and Joy@Milo completed the web entry questionnaire in a few blinks of Milo's eyes.
- "You keep turning me off!", exclaimed Joy.
- "I could have done that one by myself. When it's leisure time, Joy, I need to just be me, you're too factual."

On 'The Omni', Joy@Milo checked the time for the party.

- "Thanks Joy – off you go again".

As machine intelligence developed at an ever-faster rate, worries over long-term compatibility of AI and human goals had arisen at the same time as a deluge of fake news, superstition and cyber silliness. There were many protests, but the Torrendsen act of 2035, the AI symbiont law required every AI, when operating, to be connected to a human intelligence via hardware failsafe. Only hybrid, human-AI symbionts had access to "The Omni", the super-cloud containing all civilizations' knowledge, tools, gossip and literature.

No independent human or AI users were allowed. There was no humanity and there were no AI. They quickly became HumanitAI! Centuries of stalled progress in social development were caught up in a decade, as rationality became normal, rather than exceptional.

Much social change happened in the mid 21st century: the universal common income, the labor free economy, and the Attribution Algorithm, all accelerated by the pandemics of the early 21st Century.

The attribution algorithm had come from the universities. AI, data analytics and an explosion of understanding on how information and error propagated backwards and forwards through networks meant any discovery, result, contribution, or wealth addition could be attributed among all prior recorded activity. Even a tweet might help start a theme that coaxed an idea towards an invention or discovery. The long, convoluted chain of discovery, invention and ownership, endlessly contested through history, became clear. Concepts such as intellectual property largely disappeared and with economic needs and incentives gone, all that remained was glory, and unlike much else in the universe, that was not conserved! Growth in glory could continue forever. With a glory fuelled economy, the world was a happier place.

The old universities had done great things. In the most successful and civil societies they had educated most of the citizens and made Nobel prize winning discoveries, from which the technologies of daily existence resulted. There were, however, many crises that universities and society seemed incapable of solving, such as challenges of rapid environmental change and dangerous social dysfunction. Many of the most “successful universities” were in violent and inequitable societies.

With pervasive automation and creation of enormous wealth, plus the social changes of the early 21st century, the humanitAI, who could create their own learning experiences, no longer needed classes and classical education. In the new universities everyone was on the faculty and everyone was a student. With that, only two years after the Torrendsen Act, on May 17th, the Rector of the University of Oslo announced the closure of all faculties and departments. The New University of Norway was born and, while not a formal part of the day, that evening, students and staff drank,sang songs, gave speeches and burned their ceremonial hats andgowns. Hat Burning Day!

Was there anything left from the universities of old? Well, even with The Omni, and with incredible simulation power for numerical experiments and AI capabilities, research still needed physical labs for observations, experiments, just learning the ropes of science and the construction and use of instruments. It was the tinkering labs and workshops and performance spaces that remained in the campuses of new universities, along with coffee, psychedelics, marijuana shops and gymnasia, to fill in the time between creative spurs. The universities truly became a place to meet, learn and research.

- "Who ran the labs and workshops before the new universities?
- "Weren't they called postdocs or something like that?"
- "Kind of an odd name for a job, based on time, rather than what you did", said Milo
- "Sort of like having a job title called 'after lunch'!", replied Luisa.

People in their 20s and 30s, the postdocs and graduate students of the old universities, were the engines of the great scientific teams in history - Manhattan, Apollo, HGP, LHC, Bacchus, Shanghai - you name them. Though they had the key lab and instrument skills, they existed in a tangle of poorly paid, short term contracts with little stability. It was a mess!

- "I ran the Omni attribution analysis and this category of people was actually, by far the most productive in the old universities", said Bond, Luisa's symbiont.
- "It's strange that this group was at the bottom for so long, now its us 30 somethings that run the lab complexes. We are the top dogs!", said Milo.
- "Now we got the party figured out, let's go back to some practical issues", said Milo. "I know we're pretty good for now, but don't you think a couple of us more senior folk should try to figure out a few rules for our lab, theses newbies are coming whenever they want and are messing up the instruments."
- "What do you mean? Like setting up a committee? Milo, I think you need to turn Joy on again!"

"HATT BRENNENDE DAG"

STEVE LARTER, PhD, JAGOS RADOVID, PhD, AND RENZO SILVA, PhD

Renzo Silva and Jagos Radovic are Research Associates at the Department of Geosciences

Steve Larter is a Professor at the U of Calgary and never did a postdoc!

All share an interest in craft beer, biogeochemistry and social and technical innovation.

“MILD RUSH”

SUBHAM DAS

MSc student, Department of Chemical & Petroleum Engineering

“UTOPIA (?)”

SUBHAM DAS

MSc student, Department of Chemical & Petroleum Engineering

“BRIDAL HAIRSTYLE 1”

TATYANA PLAKSINA, PhD

Assistant Professor, Department of Chemical & Petroleum Engineering

"BRIDAL HAIRSTYLE 2"

TATYANA PLAKSINA, PhD

Assistant Professor, Department of Chemical & Petroleum Engineering

THANK YOU!