SR&ED Newsletter 2014-1

CASE STUDY EXAMPLE USING RDBASE

RDBASE.NET International SR&ED template

		Recommended documentation	GOAL: prove to Government (CRA, IRS, patent office)
I	**OBJECTIVE BEYOND STANDARD PRACTICE**		
i)	**State of Existing technology**	State benchmarking methods & sources	Limits of information available to someone "skilled in the art."
ii)	**Objective(s)**	Top 5 measureable "Objectives"	Quantifiable Objectives beyond known limits
II	**TECHNOLOGICAL UNCERTAINTIES**	Top 5 "Variables" for experimentation	Formulate "test matrix" to test hypotheses
III	**EXPERIMENTAL ACTIVITY**	Defined by tax year*	
i)	**Experimentation method**	Number of alternatives tested & how?	Justify sample sizes
ii)	**Results**	Correlate to "Objectives"	Provide basis for Conclusions
iii)	**Conclusions**	Correlate to "Variables"	"New knowledge" illustrates "Technological Advancement"

STEPS TO ADDRESS "TECHNOLOGICAL ADVANCEMENT" CRITERIA

R&D Base demo - Key Criteria Summary

STEPS

1101 - Machinery - Improve Compounding Equipment

Benchmarks:

Internet articles: 33
Patent searches: 12 patents
Competitive products or processes: 14
Similar prior in-house technologies: 8 products /
Potential components: 6 products
Queries to experts: 2 responses

Objectives:

Temperature variance: 2 Deg C
Output: 120 output/minute
Shear : 12 tons/sq.inch
Improve Dispersivity : 1 mm
Maximum cost increase : 15 %

1) UPLOAD PRIOR ART
- try to include Google patents

Uncertainty: 1 - Temperature Control

Key Variables:
HYPOTHESES

1 optimal measurement devices
2 device locations,
3 vibration - locations, intensity, duration

2) CORRELATE prior art to VARIABLES for experiments

Activity	Testing Methods	Results - % of Objective	Variables Concluded	Hours	Materials $	Subcontractor $	Fiscal Year
1 - Thermocouples	Analysis / simulation: 12 alternatives	Temperature variance: 4 Deg C (33 %) Output: 100 output/minute (0 %) Improve Dispersivity : 0.6 mm (20 %)	device locations vibration - locations, intensity, duration	272.00	4,500.00	3,796.10	2011
2 - Fiber Optic System Optimization	Analysis / simulation: 6 alternatives Trails: 4420 runs / samples Physical prototypes: 14 samples Lines of code: 5 Lines of prototype code	Temperature variance: 1 Deg C (133 %) Output: 112 output/minute (60 %) Shear : 13 tons/sq.inch (150 %) Improve Dispersivity : 0.9 mm (80 %) Maximum cost increase : 20 % (133 %)	device locations optimal measurement devices	370.00	2,000.00	1,496.76	2011

3) UPLOAD ANALYSIS of Variables

Stage 1 – Prior Art search (Due Dilgence)

Recommendations to address RFI procedures on Standard practice

I **PROJECT OBJECTIVE BEYOND STANDARD PRACTICE:**

GOAL is to prove to Government (CRA, IRS, etc.) :

Technology limits of "readily available" information to someone "skilled in the art."

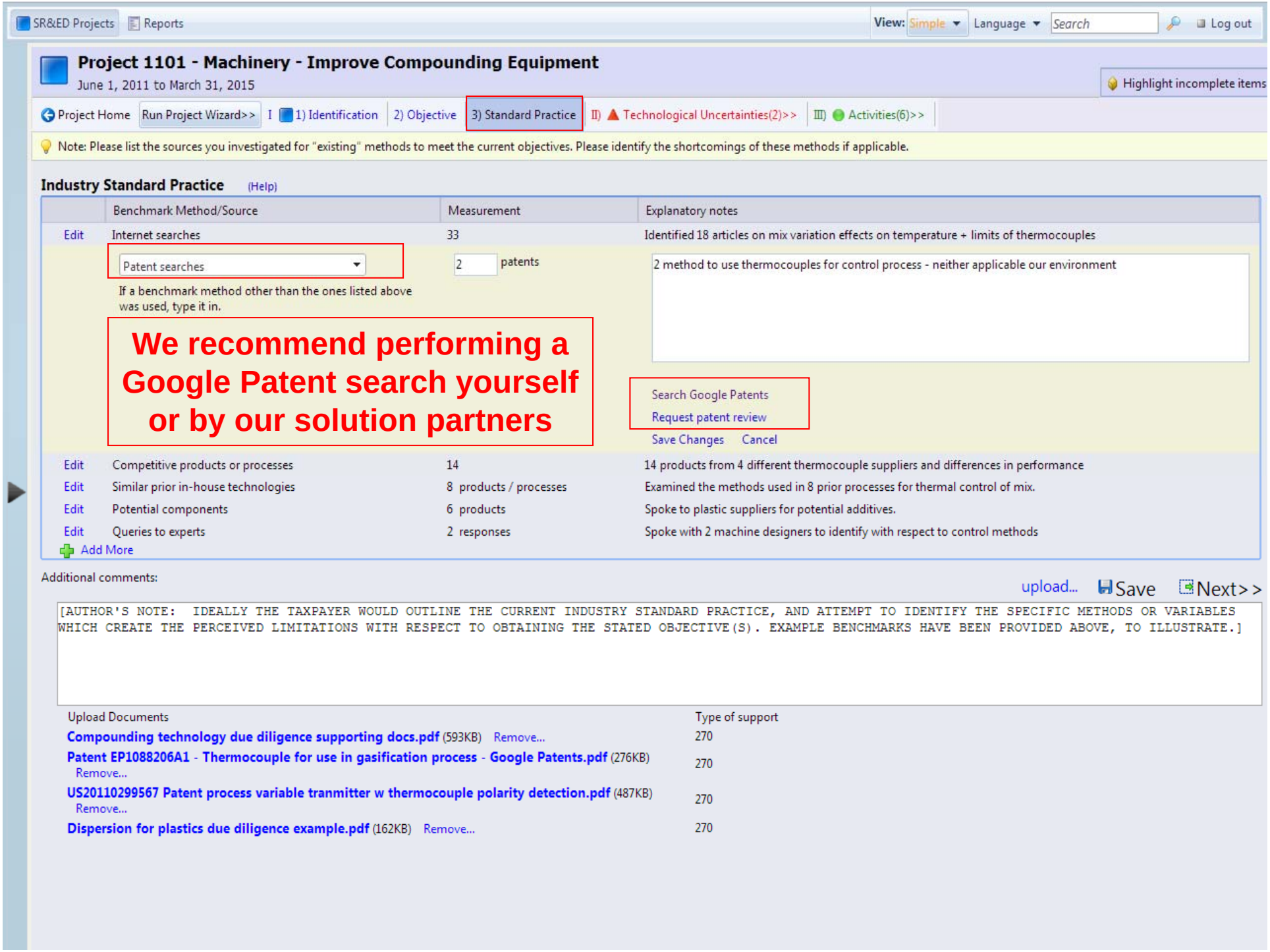
i) State of Existing technology: Benchmarking methods & sources

		Number (#) of	
i	Internet / Google Searches		internet sites
ii	Articles		articles
iii	Patent searches		patents
iv	Competitive methods		products / processes
v	In-house technologies		products / processes
vi	Potential components		products
vii	Queries to experts		responses
viii	Other		

ii) Objective(s)

Quantifiable Objectives beyond known limits

		Performance benchmarks (top 5)*	
		Benchmark 1	Benchmark 2
i	Existing benchmark		
ii	Units of measure		
iii	Performance objective		
iv	*Result (III below)**		


SR&ED Projects
Reports
View: Simple
Language
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Project 1101 - Machinery - Improve Compounding Equipment
June 1, 2011 to March 31, 2015
Highlight incomplete items
Project Home
Run Project Wizard>>
I 1) Identification
2) Objective
3) Standard Practice
II) Technological Uncertainties(2)>>
III) Activities(6)>>
Note: Please list the sources you investigated for "existing" methods to meet the current objectives. Please identify the shortcomings of these methods if applicable.
Industry Standard Practice
(Help)
Benchmark Method/Source
Measurement
Explanatory notes
Edit
Internet searches
33
Identified 18 articles on mix variation effects on temperature + limits of thermocouples
Patent searches
2
patents
2 method to use thermocouples for control process - neither applicable our environment
If a benchmark method other than the ones listed above was used, type it in.
We recommend performing a Google Patent search yourself or by our solution partners
Search Google Patents
Request patent review
Save Changes
Cancel
Edit
Competitive products or processes
14
14 products from 4 different thermocouple suppliers and differences in performance
Edit
Similar prior in-house technologies
8 products / processes
Examined the methods used in 8 prior processes for thermal control of mix.
Edit
Potential components
6 products
Spoke to plastic suppliers for potential additives.
Edit
Queries to experts
2 responses
Spoke with 2 machine designers to identify with respect to control methods
Add More
Additional comments:
upload...
Save
Next>>
[AUTHOR'S NOTE: IDEALLY THE TAXPAYER WOULD OUTLINE THE CURRENT INDUSTRY STANDARD PRACTICE, AND ATTEMPT TO IDENTIFY THE SPECIFIC METHODS OR VARIABLES WHICH CREATE THE PERCEIVED LIMITATIONS WITH RESPECT TO OBTAINING THE STATED OBJECTIVE(S). EXAMPLE BENCHMARKS HAVE BEEN PROVIDED ABOVE, TO ILLUSTRATE.]
Upload Documents
Type of support
Compounding technology due diligence supporting docs.pdf (593KB) Remove...
270
Patent EP1088206A1 - Thermocouple for use in gasification process - Google Patents.pdf (276KB)
Remove...
270
US20110299567 Patent process variable tranmitter w thermocouple polarity detection.pdf (487KB)
Remove...
270
Dispersion for plastics due diligence example.pdf (162KB) Remove...
270

Steps 1&2 – Objectives & Variables for search

1101 - Machinery - Improve Compounding Equipment

Benchmarks:
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Uncertainty: 1 - Temperature Control

Key Variables: device locations, optimal measurement devices, vibration - locations, intensity, duration

RDBASE - Prior Art Search Example

X - designate as term to search on patent databases

	Project name	TO/FOR	Objectives	BY	Key variables (to achieve objectives)
X	Improve compounding	X	Temperature variance		optimal measurement devices
			Output		device locations
			Shear	X	vibration - locations, intensity, duration
			Dispersivity		
			Cost		

Google | Improve compounding equipment FOR temperature variance & shear BY vibrat | +David | Share

Web | Images | Shopping | Videos | More | Search tools

About 50,400 results (0.44 seconds)

Computer-controlled compounding extrusion blending ...

www.google.com/patents/US7070404

Grant - Filed 25 Oct 2002 - Issued 4 Jul 2006 - Daniel Joseph MacPhee - Macphee Daniel Joseph

An extruder **apparatus** for **compounding** thermoplastic resin and ... wherein said extrusion system further comprises a low **shear** barrier screw inside a .... Some **compounding** extruders introduce room-**temperature** fibers .... Additionally, to **improve** the precision of loads provided to chamber 228, a **vibration** ...

Overview - Related - Discuss

Elastomeric vehicle vibration damping devices

image not available

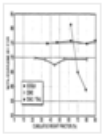
www.google.com/patents/WO1997000290A1?cl=en

App. - Filed 13 Jun 1996 - Published 3 Jan 1997 - Eric Paul Jourdain - Exxon Chemical Patents Inc

Motor vehicle **vibration** damping parts based on an ethylene, ... more functions and **equipment** are finding their way into the engine compartment. ... Natural rubber's self-plasticizing charcteristic at **compounding** **temperatures** allows a .... by viscosity at high **shear** and injection **temperatures**, **improved** cure ...

Overview - Related - Discuss

Elastomeric vehicle vibration damping devices



www.google.com/patents/EP0843700B1?cl=en

Grant - Filed 13 Jun 1996 - Issued 15 Nov 2000 - Eric Paul Jourdain - Exxon Chemical Patents Inc.

Motor vehicle **vibration** damping parts based on an ethylene, ... more functions and **equipment** are finding their way into the engine compartment. ... Natural rubber's self-plasticizing charcteristic at **compounding** **temperatures** allows a .... by viscosity at high **shear** and injection **temperatures**, **improved** cure ...

Overview - Related - Discuss

Plastic surfaces having improved surface characteristics

image not available

www.google.com/patents/US8722761

Grant - Filed 29 Oct 2009 - Issued 13 May 2014 - Narayanan Sankara Subramanian - E I Du Pont De Nemours And Company

A need exists for parts that have **improved** surface properties that are stable over ..... out using a twin screw extruder or other polymer processing

Enter initial search terms in Google Patents to find "Prior Art"

then

select the most relevant item

Patents | Application | Grant

Find prior art | Discuss this patent | View PDF | Download PDF

Computer-controlled compounding extrusion blending apparatus and method

US 7070404 B2

Publication number	US7070404 B2
Publication type	Grant
Application number	US 10/279,939
Publication date	Jul 4, 2006
Filing date	Oct 25, 2002
Priority date	Oct 25, 2002
Fee status	Lapsed
Also published as	US20040080064
Inventors	Daniel Joseph MacPhee, Christopher Mark Tanner
Original Assignee	Macphee Daniel Joseph, Christopher Mark Tanner
Export Citation	BiBTeX, EndNote, RefMan

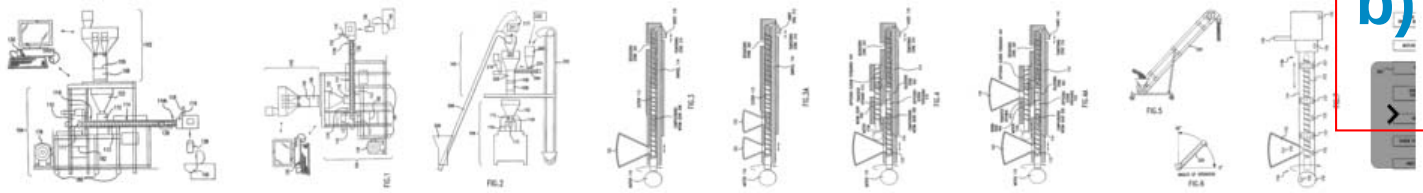
Patent Citations (11), Classifications (37), Legal Events (3)

External Links: USPTO, USPTO Assignment, Espacenet

ABSTRACT

An extruder apparatus for compounding thermoplastic resin and reinforcing fibers is disclosed. Molten thermoplastic resin is mixed in intimate contact with long reinforcing fibers of at least one and one quarter inches in length under the control of a sophisticated computer system, resulting in charge ready for molding.

IMAGES (17)



DESCRIPTION

FIELD OF THE INVENTION

This invention relates generally to extrusion compounding of resin with reinforcing fibers under control of a computer. More particularly, an extruder apparatus and process for producing a preform charge suitable for subsequent use in a molding operation, such as compression molding, is disclosed.

BACKGROUND OF THE INVENTION

Fibers and resins are normally introduced together into a compounding extruder in a solid state. Upon first being converted from a solid to a liquid by a combination

CLAIMS (24)

1. A compounding extruding and blending apparatus, comprising:

a blending system comprising a closed-loop auger feeder, responsive to a computer system;

wherein said blending system further comprises a vacuum loader and thermoplastic dryer, and includes dual paths which either incorporate or bypass said dryer and the choice of said paths can be made through said computer;

an extrusion system for forming a charge from the output of said blending

We can then

a) View Cited patents directly

OR

b) Use the prior art tool

without departing from the spirit and scope of the invention, as defined by the following claims.

PATENT CITATIONS

A) Citations: Allow users to review related patents

Cited Patent	Filing date	Publication date	Applicant	Title
US4066245 *	Apr 30, 1976	Jan 3, 1978	Whitlock, Inc.	Control for hopper loader for granular materials
US4613471 *	Jul 16, 1984	Sep 23, 1986	Harrel, Incorporated	Based on volume per unit time of extrudate being formed
US5052811 *	Apr 19, 1990	Oct 1, 1991	Akebono Brake Industry Co., Ltd.	Apparatus for blending friction material
US5225137 *	Feb 3, 1992	Jul 6, 1993	Abc Group	Bottle recycling apparatus and method
US5240324 *	Jun 5, 1992	Aug 31, 1993	Bluffton Agri/Industrial Corp.	Continuous flow system for mixing and processing bulk ingredients
US5401161 *	Jun 30, 1993	Mar 28, 1995	Long; Michael C.	Injection molding valve
US5792495 *	Oct 3, 1996	Aug 11, 1998	Warner-Lambert Company	Elastomer processing system for chewing gum
US6261081 *	Jul 15, 1999	Jul 17, 2001	Ralston Purina Company	Extruder with variable restriction element
US20010009307 *	Jan 24, 2001	Jul 26, 2001	Abrams Fredric Louis	Plasticator and molding system and method
DE19909307A1 *	Mar 3, 1999	Sep 23, 1999	Siemens Ag	Plastic product production machine e.g. an injection molding machine, extruder or blow molding machine
EP1128244A2 *	Jun 24, 2000	Aug 29, 2001	Negri Bossi S.P.A.	Network connection system for machine tools, particulary injection presses for plastics

* Cited by examiner

CLASSIFICATIONS

U.S. Classification	425/113, 425/149, 425/311
International Classification	B29C47/96, B29C47/10, B29C47/92
Cooperative Classification	B29C47/369, B29K2105/16, B29C47/1027, B29C47/1018, B29C2947/92704, B29K2105/08, B29C47/02, B29C47/0009, B29C2947/92638, B29C2947/92933, B29C2947/92676, B29C2947/924, B29C2947/92857, B29C2947/9259, B29K2105/06, B29C2947/92657, B29C2947/92533, B29C2947/92828, B29C2947/92895, B29C47/1045, B29C47/96, B29C47/92, B29C2947/926, B29C2947/92952, B29C47/10, B29C2947/92019, B29C47/004, B29C2947/92209
European Classification	B29C47/96, B29C47/10, B29C47/92

LEGAL EVENTS

B) Prior Art Finder creates 5 separate top 10 lists

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Prior Art Finder | Top 10 | Scholar | Patents | Web | Books | People | Export

Search Terms

Add your own

- [x] reinforcing fibers
- [x] compounding thermoplastic resin
- [x] charge ready
- [ ] quarter inches
- [ ] molten thermoplastic resin
- [ ] compounding extrusion
- [ ] extrusion blending
- [ ] intimate contact
- [ ] computer-controlled
- [ ] molding

Custom Date Range

Start date: MM/DD/YYYY

End date: 10/25/2002

Fiber-reinforced composites: materials, manufacturing, and design
PK Mallick - 1993
... Thus, even though the **fibers** provide **reinforcement** for the matrix, the latter also serves a number of useful functions in a **fiber-reinforced** composite material. The principal **fibers** in commercial use are various types of glass and carbon as well as Kevlar 49. ...

Mechanical degradation of glass fibers during compounding with polypropylene
B Fisa - Polymer composites, 1985
... new high performance/high **cost** engineering **thermoplastics** require that the **reinforcing** effect be ... 3) studied single screw extrusion **compound**- ing of several glass **reinforced resins** and found ... 2.65 mm); undispersed bundles predominate with a small number of individual **fibers**. ...

The reinforced plastics handbook
J Murphy - 1998
... The concept of **reinforcing** a **resin** is as old as the first really synthetic ... 15 and F, 16 fighters in 1974 and, two years later, boron **fibre**,**reinforced** epoxy was ... based on polyetherketones offered an interesting alternative to airframe manufacturers, with **resin reinforcement** systems in ...

Process modeling in composites manufacturing
SG Advani, EM Sozer - 2002
... Preface Properties and performance of products made from **fiber reinforced** composites depend on materials, design, and ... The end of each chapter has questions and problems that **reinforce** the content and ... knitting, or stitching, shaped into 2-D or 3-D **reinforcing** fabrics before ...

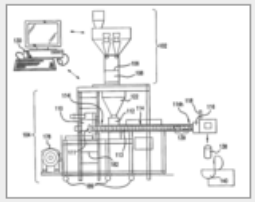
Rotatably driving extruding screw, introducing reinforcing fibers, ...

www.google.com/patents/US5185117
Grant - Filed Jul 10, 1991 - Issued Feb 9, 1993 - Ronald C. Hawley - Composite Products, Inc.
A process for **compounding reinforcing fibers** with a **thermoplastic resin** in an .... The mold is opened and the part is removed so that the cycle is **ready** to be ... Further disadvantages are that the molder must pay the **cost** of **compounding** the ...

Extruder apparatus and process for compounding thermoplastic resin ...

www.google.com/patents/US5165941
Grant - Filed Jul 11, 1991 - Issued Nov 24, 1992 - Ronald C. Hawley - Composite Products, Inc.

Patent US7070404



Computer-controlled compounding extrusion blending apparatus and method

Show Claims

Inventors: Daniel Joseph MacPhee, Christopher Mark Tanner
Assignees: Macphee Daniel Joseph, Christopher Mark Tanner
Patent number: US7070404
Application number: 10/279,939
Filing date: Oct 25, 2002
Issue date: Jul 4, 2006

Discuss this Patent

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Prior Art Finder

Update search terms then export top 10 list

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Search Terms

Add your own

- [x] DISPERSIVITY
- [x] SHEAR
- [x] reinforcing fibers
- [x] compounding thermoplastic resin
- [ ] charge ready
- [ ] quarter inches
- [ ] molten thermoplastic resin
- [ ] compounding extrusion
- [x] extrusion blending
- [ ] intimate contact
- [ ] computer-controlled
- [ ] molding

Custom Date Range

Start date: MM/DD/YYYY

End date: 10/25/2002

[Processing and characterization of aligned vapor grown carbon **fiber reinforced** polypropylene]
RJ Kuriger, MK Alam, DP Anderson, RL Jacobsen - Composites Part A: Applied ..., 2002
... [21] that **fiber dispersion** could be ... It consisted of a feeding zone, a compression zone, a conveying zone, a **shearing** zone, a venting zone, and a metering zone. ... The longitudinal tensile strength (σ L) is found by using the rule of mixtures and the **shear** lag model of Kelly and ...

[Effect of **compounding** on the properties of short **fiber reinforced** injection moldable **thermoplastic** composites]
DM Bigg - Polymer composites, 1985
... This results in considerable **shear**-induced fi- ber breakage during **compounding** and molding. ... Fig. 2. Effect of mixing conditions in injection molder on theftber **dispersion** in parts molded from ... dry **blends** cannot be achieved between pellets and **fibers**, and the **shearing** forces of ...

[Mechanical degradation of glass **fibers** during **compounding** with polypropylene]
B Fisa - Polymer composites, 1985
... **reinforced resins**, the advent of new high performance/high cost engineering **thermoplastics** require that the **reinforcing** effect be ... These **fibers** are much more likely to break as a result of **shear** stresses in the melt ... As the **dispersion** im- proves due to longer **compounding** times (Fig ...

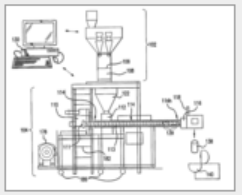
[Novel **reinforced** polymers based on **blends** of polystyrene and a thermotropic liquid crystalline polymer]
RA Weiss, W Huh, L Nicolais - Polymer Engineering & Science, 1987
... energy intensive (1 -6). In addition, it is difficult to achieve a uniform **dispersion** of **fibers** ... in mechan- ical properties for the **blend** similar to those attained by adding **reinforcing fibers** to the ... At the higher **shear** rates, measured with the capillary viscometer, an inversion of the viscos ...

[Method for making **fiber-reinforced** plastics]

www.google.com/patents/US4927579
Grant - Filed Apr 8, 1988 - Issued May 22, 1990 - Eugene R. Moore - The Dow Chemical Company
A method for adding intact **fiber reinforcing** material into **thermoplastic resin** ... low to medium **shear**, injecting the resulting mixture into an **extruder** with a resin to be **reinforced** ... for recycle while the **reinforcing** glass **fiber** and polymer **blend** is **extruded**. ... **blending** said **dispersion** into a molten polymer to be **reinforced**; and.

[Uniform **dispersion** in **thermoplastic** adhesive]

Patent US7070404



Computer-controlled compounding extrusion blending apparatus and method

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Application number: 10/279,939
Filing date: Oct 25, 2002
Issue date: Jul 4, 2006

Discuss this Patent

Stage 2 – Uploading “Prior Art - Due Diligence” data to RDBASE

Google Prior Art Finder **Report for US7070404 - 06/19/2014**

Search Terms **DISPERSIVITY, SHEAR, reinforcing fibers, compounding thermoplastic resin, extrusion blending**

Search Results - Top 10's

Users can export & save this list then review related docs

1) Scholarly articles

Title	URL
Processing and characterization of aligned vap	http://www.sciencedirect.com/science/article/pii/S1359835X01000707
Effect of compounding on the properties of sh	http://onlinelibrary.wiley.com/doi/10.1002/pc.750060105/abstract
Mechanical degradation of glass fibers during	http://onlinelibrary.wiley.com/doi/10.1002/pc.750060408/abstract
Novel reinforced polymers based on blends of	http://waynedev.uakron.edu/cpspe/documents/weisspublications/WeissHuhNicolaisPES1987.pdf
In situ composites: blends of isotropic polyme	http://onlinelibrary.wiley.com/doi/10.1002/pen.760270606/abstract
Mechanical property enhancement of glass fib	http://www.sciencedirect.com/science/article/pii/1359835X95000384
Low temperature processing of ultra-pure cell	http://www.fpl.fs.fed.us/documnts/pdf2002/jacob02a.pdf?origin=publication_detail
Composites reinforced with cellulose based fi	http://www.sciencedirect.com/science/article/pii/S0079670098000185
A technology review of wood-plastic composit	http://www.wpcinfo.org/techinfo/documents/wpc_overview.pdf
Thermoplastics reinforced with wood fillers: a	http://www.tandfonline.com/doi/abs/10.1080/03602559808001373

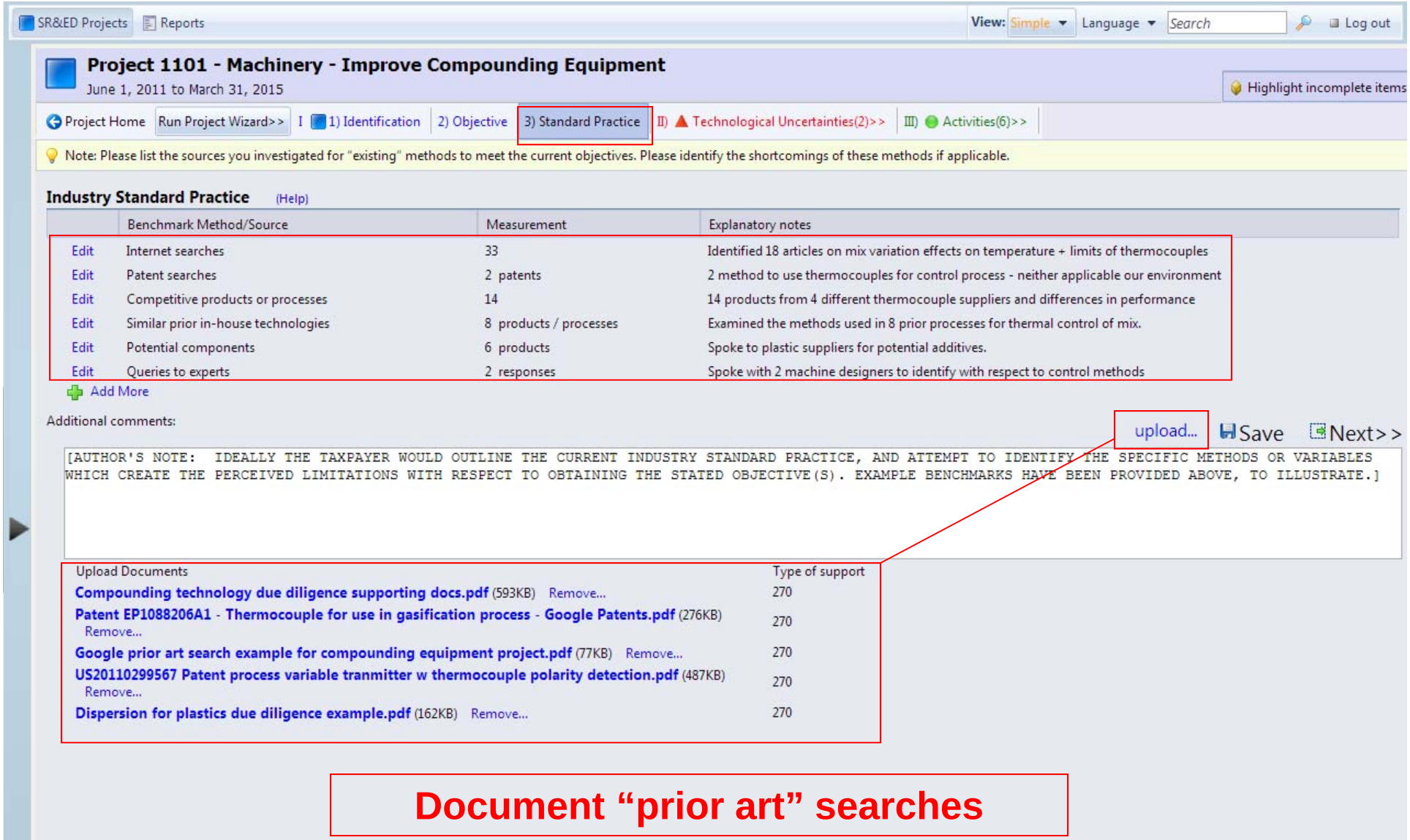
2) Patents

Title	URL	Published Date	Inventor	Assignee
Method for making fiber-reinforced plastics	http://www.google.com/patents/US4927579	Issued May 22, 1990	Eugene R. Moore	The Dow Chemical Company
Uniform dispersion in thermoplastic adhesive	http://www.google.com/patents/US4944965	Issued Jul 31, 1990	Bruce A. Luxon	American Cyanamid
Mixing of filamentary reinforcing material witl	http://www.google.com/patents/US3453356	Issued Jul 1, 1969	Raymond W Kent Jr	Dow Chemical Co
Extruded thermoplastic articles having improv	http://www.google.com/patents/EP0379730A2	Published Aug 1, 199	Robert Russel Gallucc	General Electric Company
Method for molding glass-filled thermoplastic	http://www.google.com/patents/US4402902	Issued Sep 6, 1983	John C. Falk	Borg-Warner Corporation
Method for improving fiber dispersion and ori	http://www.google.com/patents/US6756429	Issued Jun 29, 2004	Joseph R. Webster	Clariant Finance (Bvi) Limited
Improved glass-filled thermoplastic resins	http://www.google.com/patents/EP0081230A1	Published Jun 15, 198	John Carl Falk	Borg-Warner Chemicals Inc.
Glass fiber reinforced resins containing disper	http://www.google.com/patents/US3639331	Issued Feb 1, 1972	Hattori Kiyoshi	Dart Ind Inc
Molded article of fiber-reinforced thermoplas	http://www.google.com/patents/US5866256	Issued Feb 2, 1999	Tatsuo Izumitani	Daicel Chemical Industries, Ltd.
Method for creating a billet for molding a part	http://www.google.com/patents/US6190586	Issued Feb 20, 2001	Fredric Louis Abrams	Composite Technologies Co., Llc

3) Web

Title	URL
Thermoplastic Composites - Technology & Bus	http://www.tifac.org.in/index.php?option=com_content&id=535:thermoplastic-composites-technology-a-business-opportunities&c
Compounding	http://www.ril.com/downloads/pdf/compounding.pdf
Patent US4044188 - Stampable thermoplastic s	http://www.google.com/patents/US4044188
Patent EP0084152B1 - Sized glass fibers for the	https://www.google.com/patents/EP0084152B1?cl=en
2.0 Literature Review	http://scholar.lib.vt.edu/theses/available/etd-0898-145634/unrestricted/CH2.PDF
Development of the Morphology and Crystalli	http://www3.ntu.edu.sg/home/sreekumar/paper2.pdf
English/Metric Conversion Chart - BASF	http://www2.basf.us/PLASTICSWEB/displayanyfile?id=0901a5e180004879
:5 ,' <'(thermoplos'cic resin T9 l Melting point -	http://patentimages.storage.googleapis.com/pdfs/US5866256.pdf
SABIC-PLA-751 Injection Molding - Control Pla	http://www.controlplastics.com/injection_molding/HealthcareEdu/SABIC-PLA-751_Injection_Molding.pdf

4) Books



Document “prior art” searches

Stage 3 - Recommendations to address Documentation of experiments

III		**EXPERIMENTAL ACTIVITY**	Defined by tax year*	
	i)	**Experimentation method**	Number of alternatives tested & how?	Justify sample sizes & retain evidence of experiments
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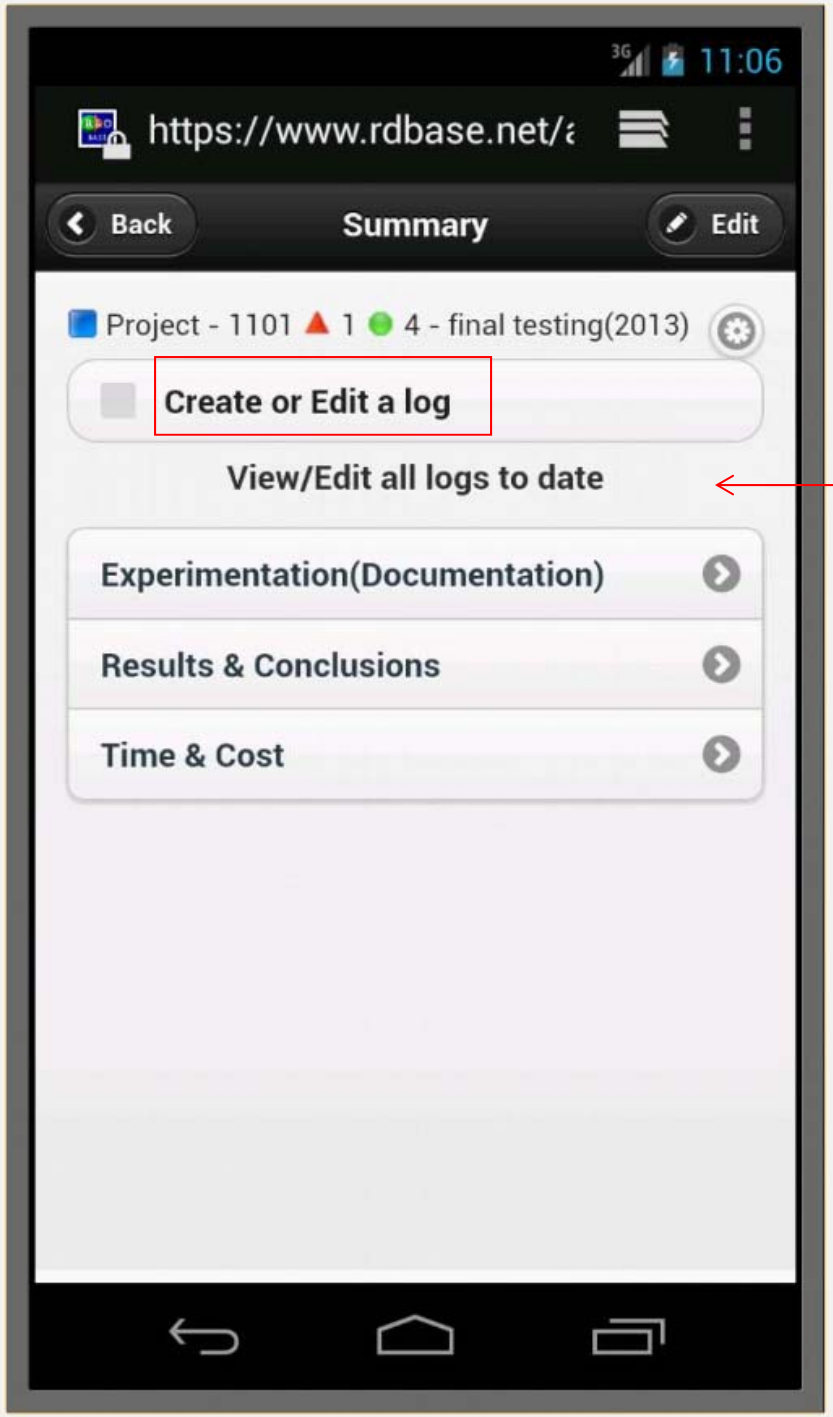
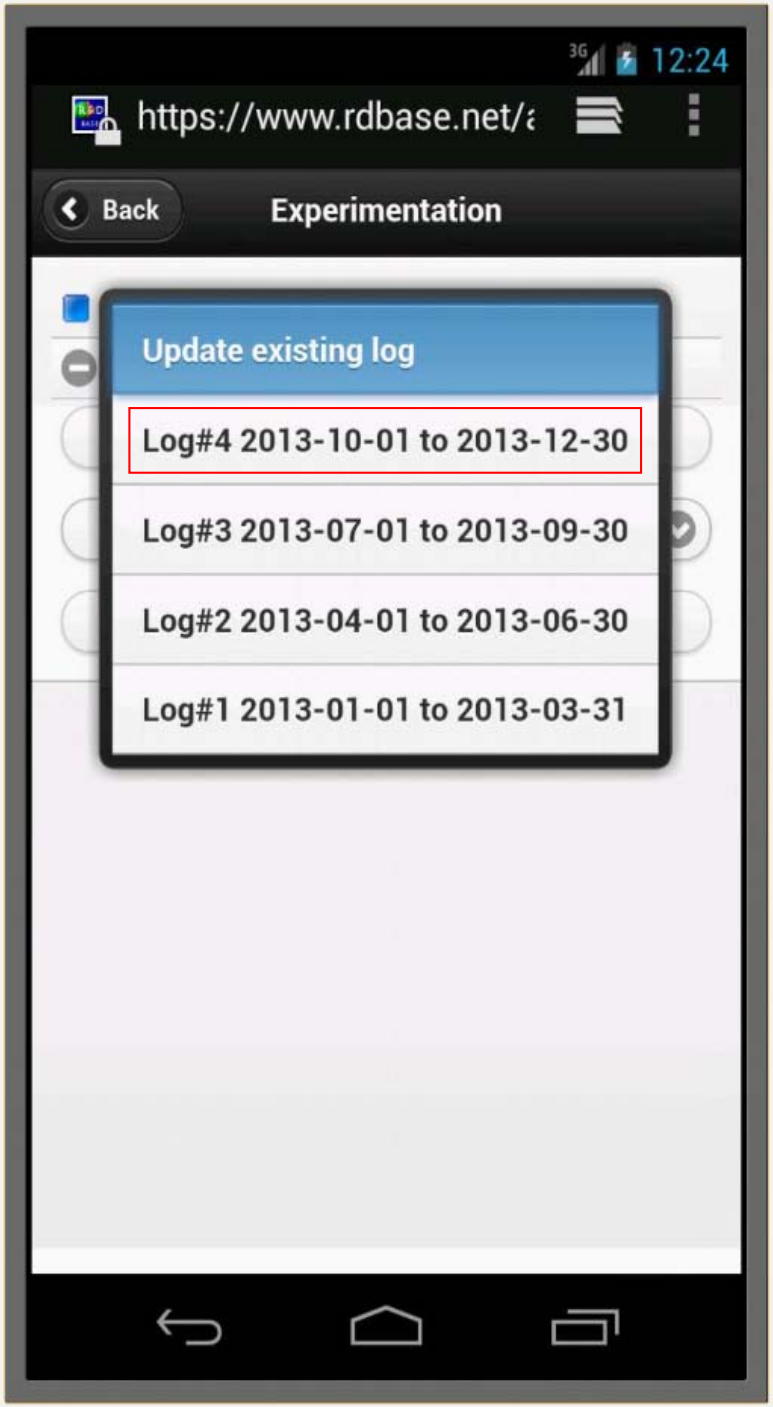
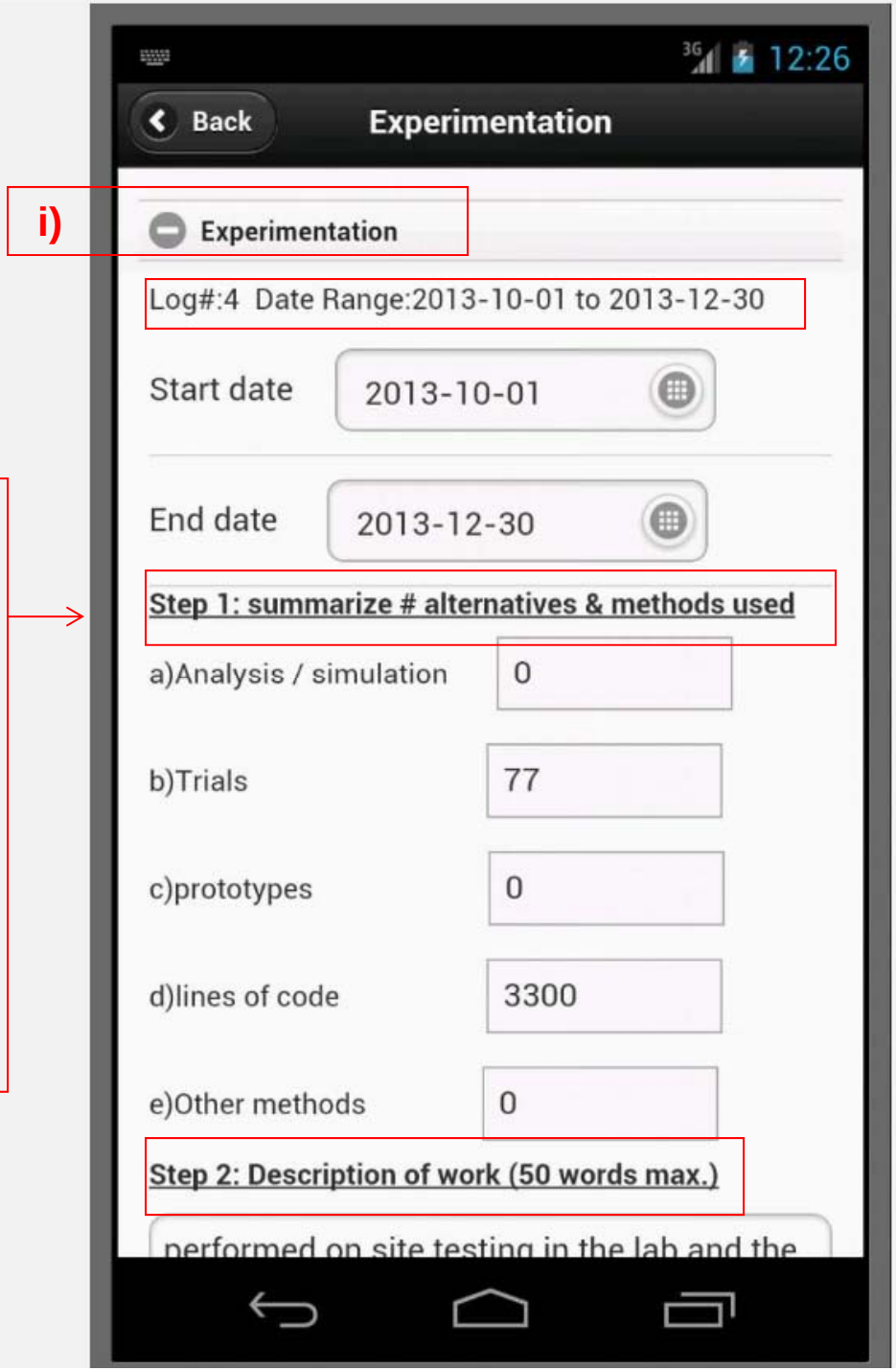


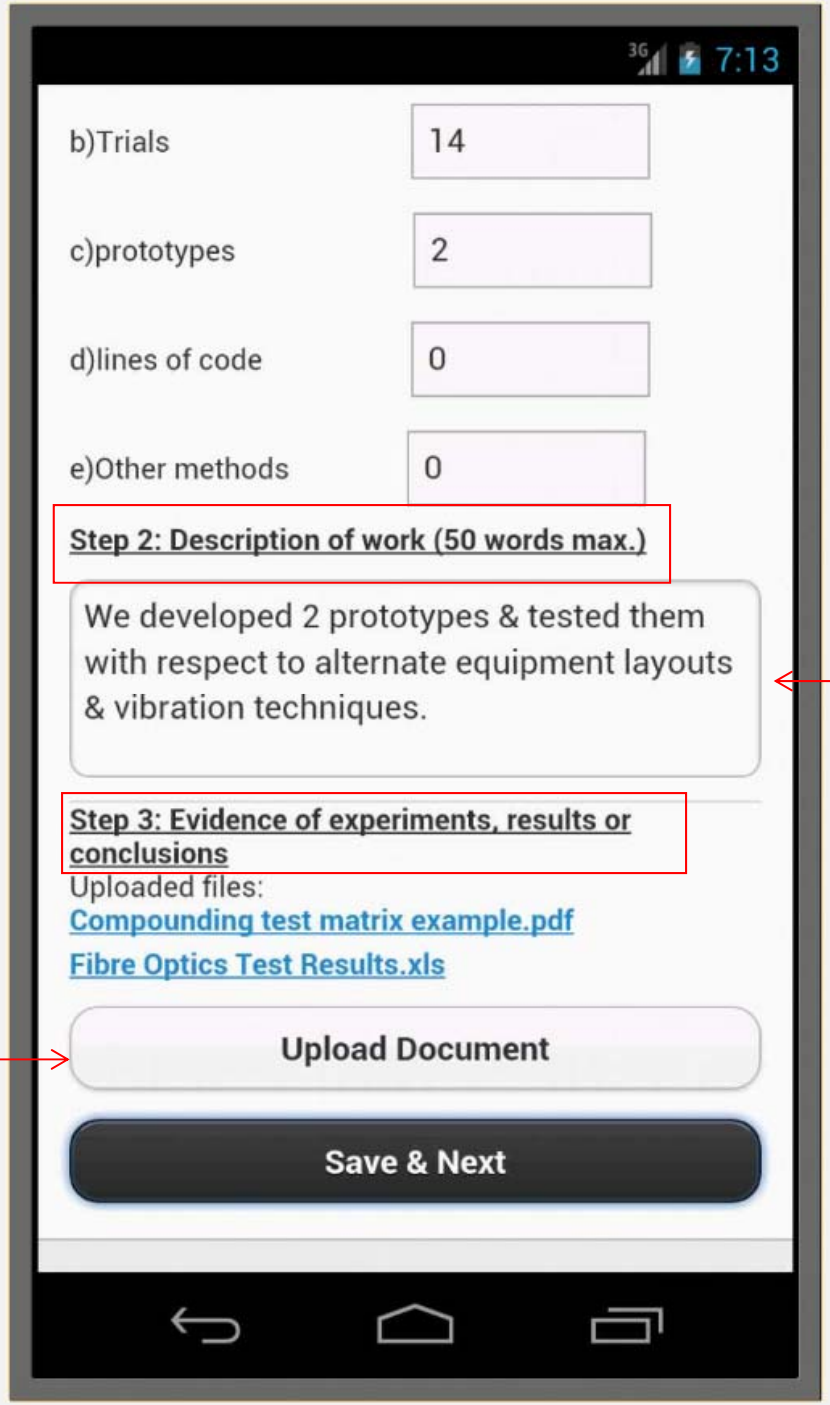
view ALL logs for the year

or any desired “log intervals”



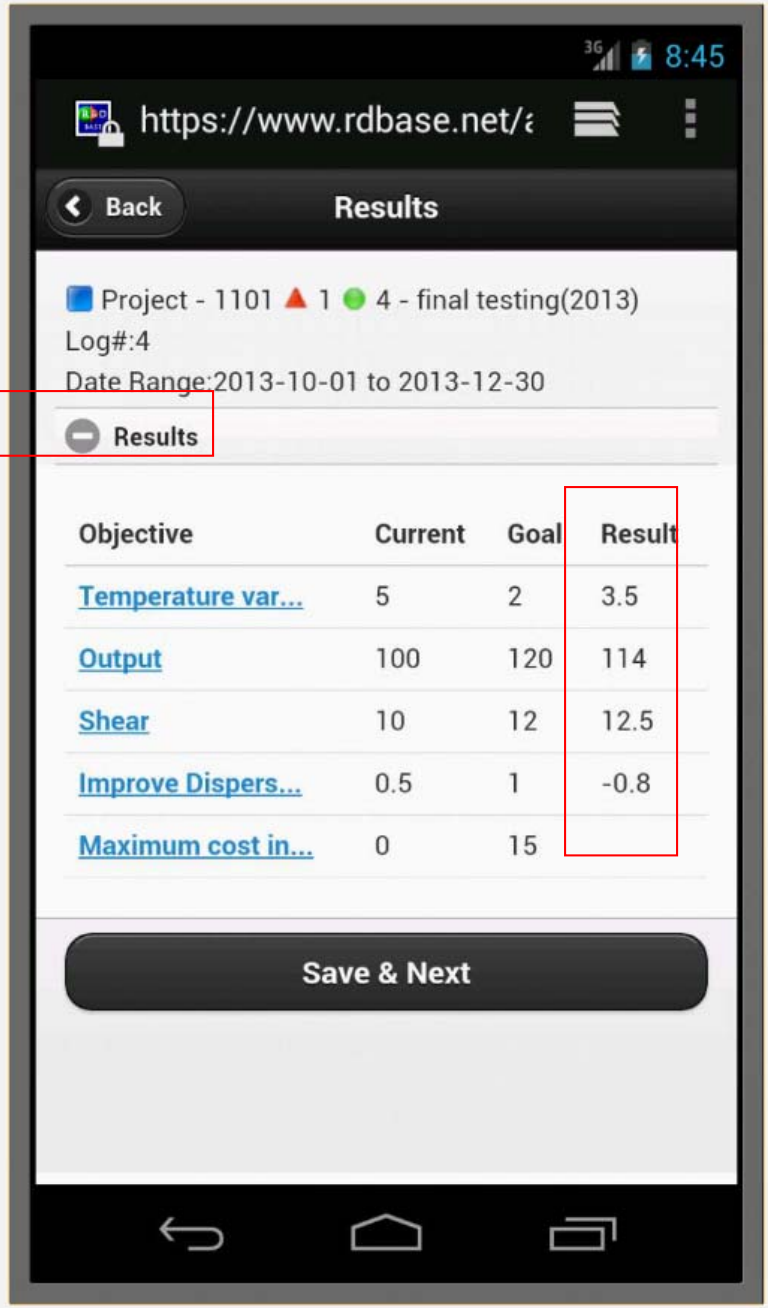
The TEAM can quickly summarize the number of alternatives examined & methods used.





Use the voice to text function on most phones.

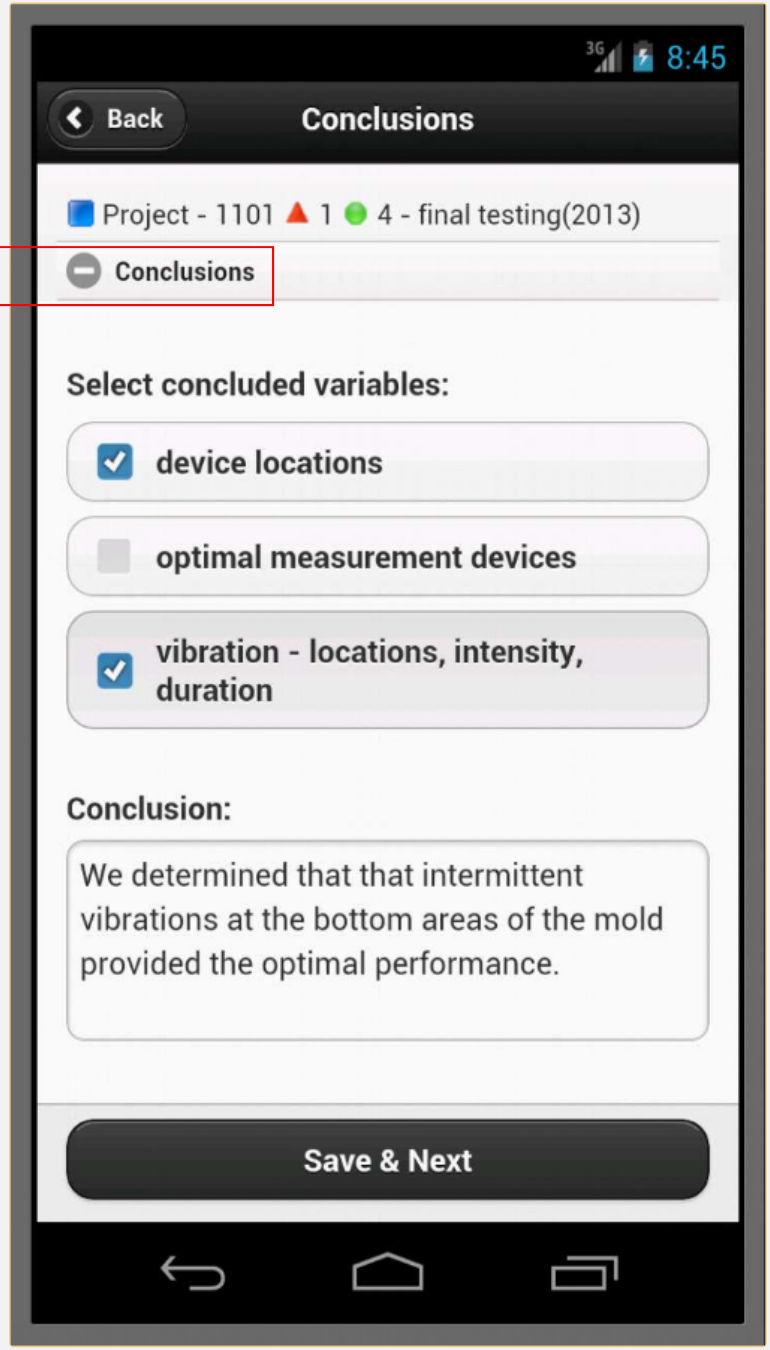
Upload supporting documents including pictures & videos.



•ii)

Compare results to objectives…

•iii)



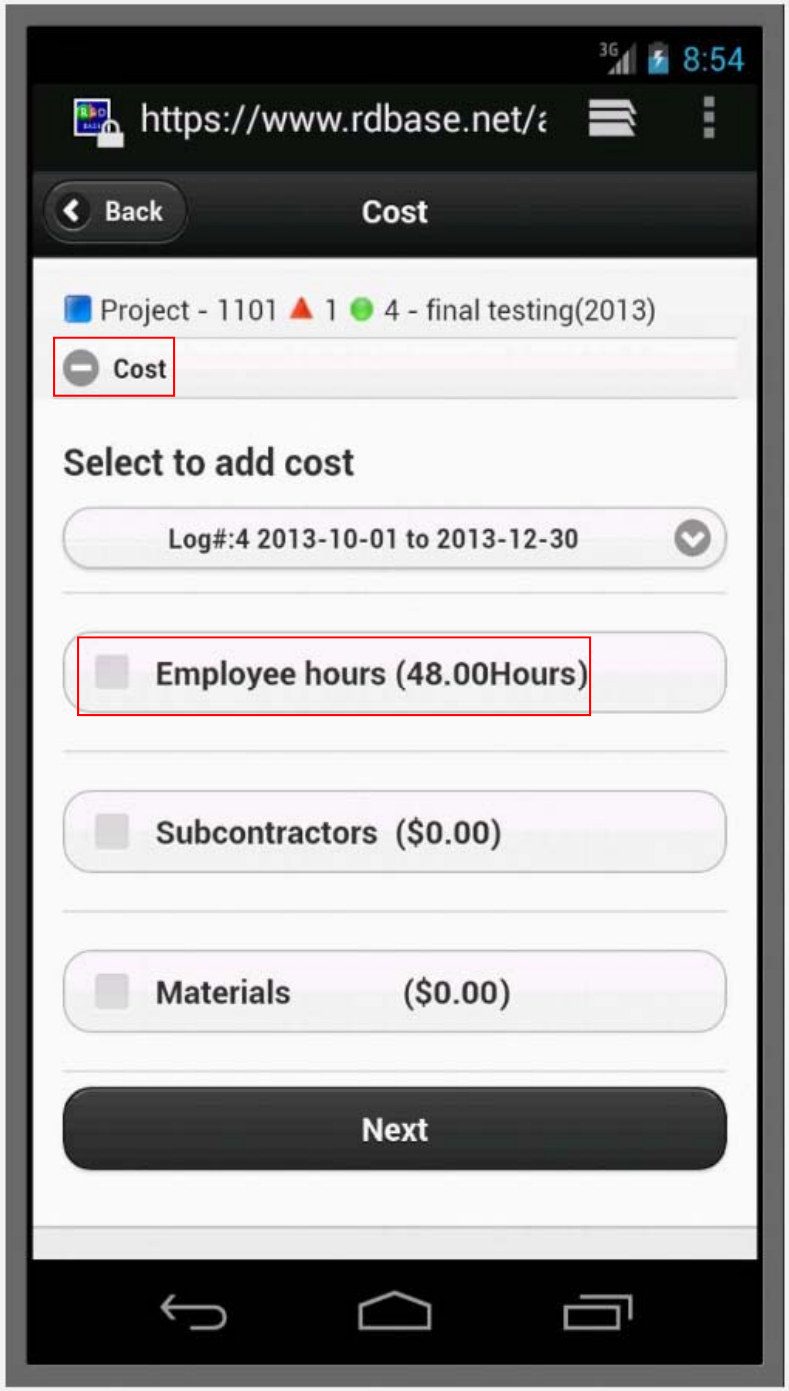
& provide "conclusions" on "variables" of research = Advancements

Recommended timesheet details to address RFI procedures

Recommended Employee time detail for SR&ED *(record for each project / each year)*

Employee details			Linking work to SR&ED				SR&ED wages	
First Name	Last Name	Hours Worked	Type of work	Variables researched	Comments	Location	*hourly $ rate*	*SR&ED $*
			1) Design 2) Testing 3) Programming 4) Supervision	*OPTIONAL - Link to the variables in the project*	*OPTIONAL - should be completed by the more senior people if possible.*	*Country + Province or State*		
ALREADY EXISTS most systems			This information is MISSING in most time reporting systems				Complete @ y/e	
NEED TOTALS BY STATE / PROVINCE								$ -

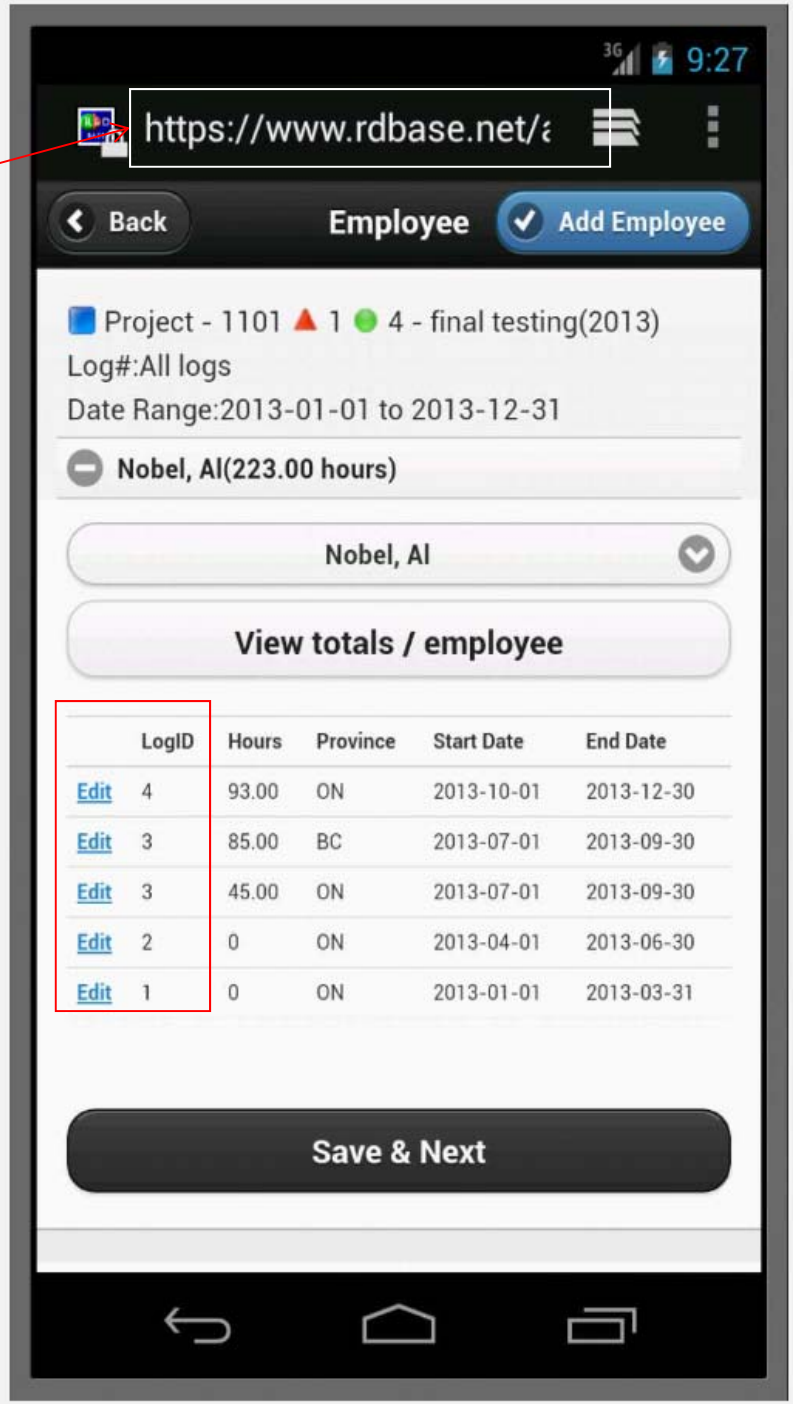
Finally we can “log” all related costs



By employee or supplier

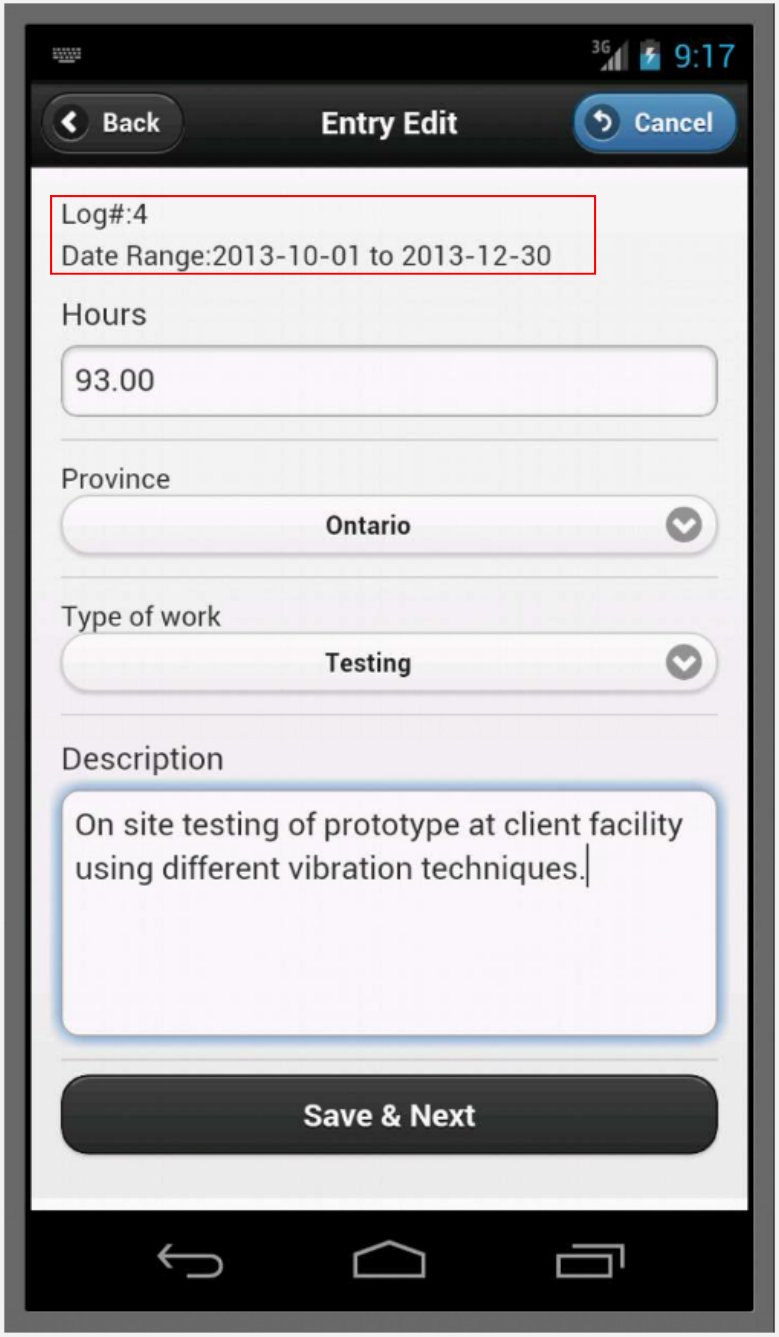
Team co- ordination

Managers copy & email page links to Researchers.

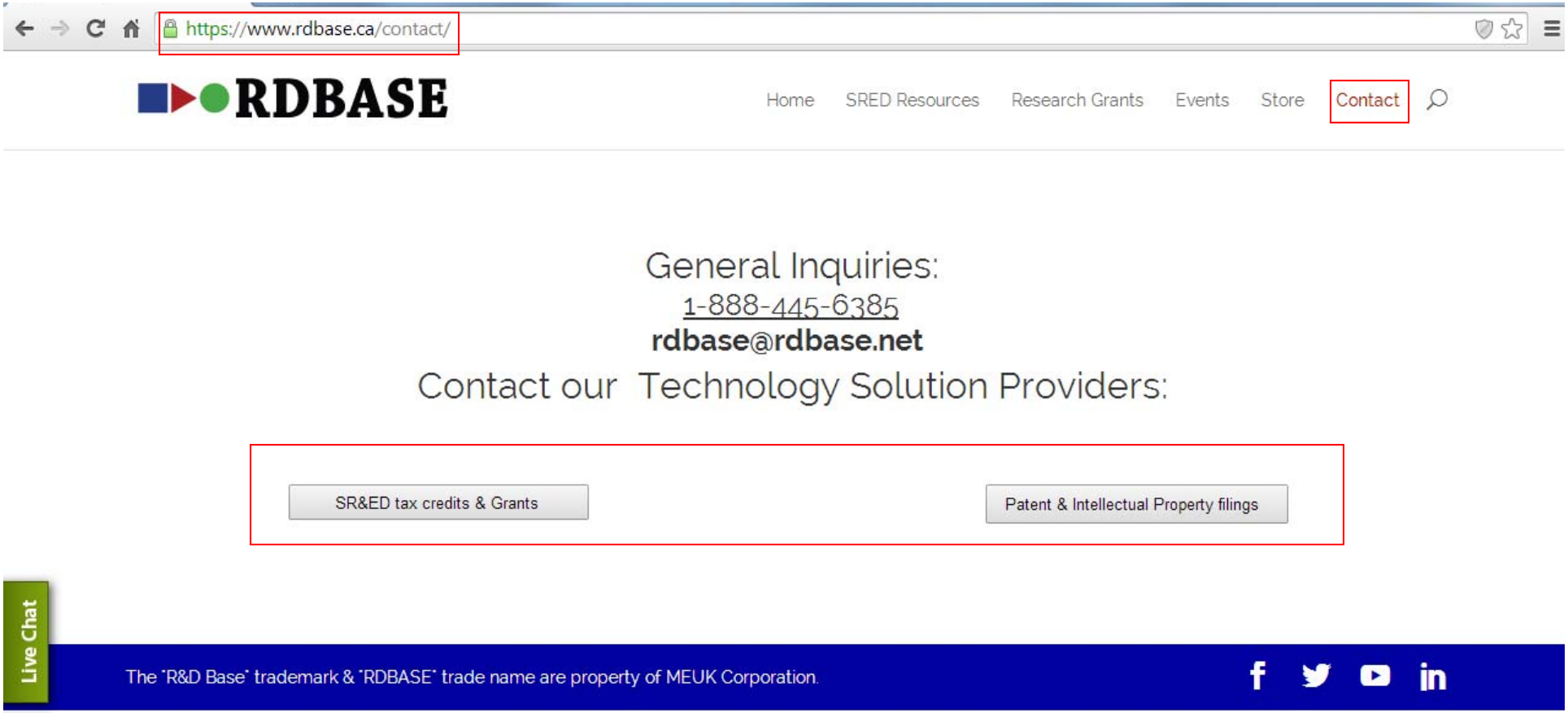


Researchers can enter their time

Including descriptions of work for each log period



Stage 4 – filing claims for Patents, Grants & Tax Credits



Our Solution partners can provide a free quote for

- Searches

&

- Filing Services

Questions & feedback

Please email

rdbase@rdbase.net