

Gem and Jewellery Industry in Thailand: History and Experience

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Background of Thai Gem and Jewellery

- ✦ Gems and precious metals have been used for centuries amongst Thais who used them to create artifacts and ornaments.



Background of Thai Gem and Jewellery (cont.)

- ✦ In 1782 it was recorded that oriental rubies and topaz (yellow sapphire) were found in the hills of Trat and Chantaburi provinces, eastern Thailand.



Background of Thai Gem and Jewellery (cont.)

- ✦ Blue sapphires are found in Kanchanaburi and Phrae provinces.



- ✦ Thailand has long been recognized as the world's foremost coloured stones centre and also the craftsmanship in heat treatment as well as cutting & polishing of gems.



Gem Mining History

In the last 30 years:
Primitive Gem Mining



Mechanized Gem Mining

Small scale mining

(Developed from tin mining)

Medium-large scale mining



Mechanized Small-scaled Gem Mining

- Gravel pump mine



**Small and
limited area**



Mechanized Small-scaled Gem Mining

- Open cast mine



Chanhaburi, Trat provinces



Mechanized Gem Mining

Medium-large Scale Mining

SAP Mine in Kanchanaburi



Factors: Development from primitive small-scaled mining to the mechanized ones

- Safety



- Mine reclamation



Government requires the environmental reclamation



- Land slide
- Drainage system



Key components of Thai Gem and Jewelry Industry:

- Gem mining
- Appropriate technologies
- Gem treatments
(Trials and Errors)



The world 's foremost
coloured stone centre



- Gem cutting



The world 's foremost coloured stone centre

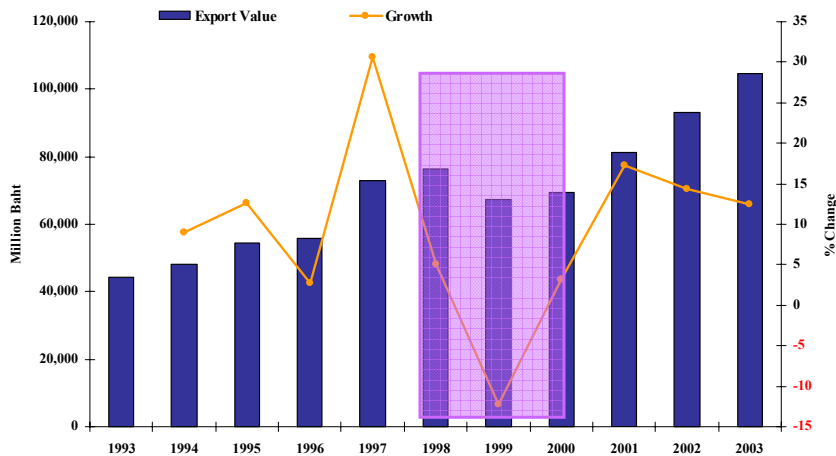


Government and Private Sector Supports

- Ⓜ Department of Export Promotion ,Ministry of Commerce
- Ⓜ Department of Industrial Promotion,Ministry of Commerce
- Ⓜ Department of Mineral Resources,Ministry of Natural Resources and Environment
- Ⓜ Department of Primary Industry and Mines,Ministry of Industry
- Ⓜ Ministry of Education
- Ⓜ The Thailand Research Fund
- Ⓜ Gemmopolis Industrial Estate and Free Trade Area
- Ⓜ Thai Gem and Jewelry Trader Association



Thai Gem & Jewelry Exports during 1993-2003



Source: The Gem and Jewelry Institute of Thailand in collaboration with Thai Customs Department



The Establishment of



The Gem and Jewelry Institute of Thailand (Public Organization)



Joint efforts



- ✦ **Ministry of Commerce**
- ✦ **Ministry of Industry**
- ✦ **Chulalongkorn University**
- ✦ **Thai Gem & Jewelry Traders Association**





The Gem and Jewelry Institute of Thailand (Public Organization)



GIT's Missions:

- ② Boost Gem & Jewellery Industry
- ② to ensure the customers' confidences and to develop, promote and support the Gem and Jewellery Industry.



GIT's Operation

- 1. Gem Testing Laboratory to analyze and assess gems to ensure compliance with international standard



GIT GEMTESTING LABORATORY



Raman Spectroscopy



Energy dispersive X-Ray Fluorescence Spectrometer

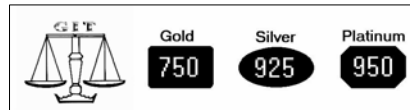


FTIR Spectroscopy



UV-Visible NIR Spectrometer

GIT's Operation



2. Precious metal laboratory to do assaying the purity of gold, platinum and silver as well as to do hallmarking on precious metals by laser



GIT's Operation

3. GIT Researches:

- Gemstone Colour Communication
- Geographic Origin Determination
- Authenticity of Diamond Colours
- Ruby & Sapphire Grading
- Marketing
- Indications of Heating
- Heat Treatment
- Gem Cutting Standards and Quality



GIT Research:

GIT Gemstones Grading System



GIT Research:

Country of Origin of Rubies, Sapphires and Emeralds

The Gem and Jewelry Institute of Thailand
 The Gemmological Testing Laboratory of GIT is the official
 CIBJO registered laboratory for Thailand

GEM IDENTIFICATION REPORT

Report No.:	SAMPLE	Date:	30th June 2003
Sample Type:	1 cut stone	Carat weight:	2.17 ct
Cut:	Modified brilliant/Step	Colour notation:	Deep-violetish blue
Shape:	Rectangular cushion	Clarity grade:	Very Good (NI)
Dimensions:	7.68 x 6.47 x 4.51 mm	Cut grade:	Very Good
Origin:	Sri Lanka		

IDENTIFICATION RESULT

Species: **NATURAL CORUNDUM**

Variety: **NATURAL BLUE SAPPHIRE**

Magnification 3x



Comment(s): **No indications of thermal enhancement.**

Instruments Used for Identification

IR Spectroscopy	UV Fluorescence	UV-Vis Absorption	IR Microscopy
<input type="checkbox"/> Visual Spect	<input type="checkbox"/> DCLW/200KV Lamp	<input type="checkbox"/> 1107/510/500 Spect	<input type="checkbox"/> FTIR Spect
<input type="checkbox"/> XRF	<input type="checkbox"/> Laser Raman Spect	<input type="checkbox"/> X-Ray Diffraction	<input type="checkbox"/> Diamond Tester
<input type="checkbox"/> Cathode Luminescence	<input type="checkbox"/> Other		

Please see the back side for additional information.
The original report with signature and the green plastic hologram is the only valid identification document.

SAMPLE

Sirwanee Sakavej
B.Sc. (General Science), FGA, CDO (HRD)

Chanisa Amornvorn
B.Sc. (Geology), FGA, CDO (HRD)

The Gem and Jewelry Institute of Thailand
GIT is the National Institute for Testing, Research and Development of Gem and Jewelry
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Tel. +662-2542000, Fax. +662-2542420, Email: gem@git.or.th, www.gemtest.or.th



GIT Research:

New treatment in corundum: Be treated sapphires



GIT Research:

Authenticity of Diamond Colours



The Department of Mineral Resource

The Gem and Jewelry Institute of Thailand
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GEM IDENTIFICATION REPORT

Report No: Sample Date: Sample
Sample Type: I cut stone Weight: 7.99 ct
Cut: Brilliant/Step Dimension: 12.02 x 8.42 x 5.98 mm
Shape: Oval Colour: Yellow


Magnification: 1.5x

IDENTIFICATION RESULT
Species: NATURAL DIAMOND
Variety: TREATED FANCY DIAMOND

Comments: With artificial coloration.

Instruments Used for Identification

UV Fluorescence	1	Thermometer	30°C	Refractor	30°
IR Transmittance	20.0000 (15.0000)	RFID/PC/SQL Spec	1.1.1.1.1.1.1	1.1.1.1.1.1.1	1.1.1.1.1.1.1
FTIR/IR	1.1.1.1.1.1.1	1.1.1.1.1.1.1	1.1.1.1.1.1.1	1.1.1.1.1.1.1	1.1.1.1.1.1.1
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*Please see the back side for additional information.
The original report with signatures and the gem photo belongs to the only valid identification document.*

SAMPLE

Planning Laboratory: F.G. (Gongg) Graduate Gemologist (GGA)
Executive Laboratory: R.G. (Gongg) Gemologist (GGA), CIDJO (GID)

The Gem and Jewelry Institute of Thailand
GIT is the National Institute for Training, Research and Development of Gem and Jewelry
Ministry of Mineral Resources, 192, Sanam Chai Road, Bangkok 10250, Thailand. Phone: (662) 570-2500, Fax: (662) 570-2501, E-mail: info@git.or.th



The Gem and Jewelry Institute of Thailand

<http://www.git.or.th>

GIT human resources developments

Education

- FGA
- GIT Short Courses: Gem & Jewelry Business Diploma (GJBD), CAD/CAM Jewelry Design, Design by GIT (Invited World Specialists), and Special Training Courses (Diamond, Ruby & Sapphire, Emerald, Pearl, etc)
- International Training Courses: Advanced Scientific Gemmology, Tailor-made Courses (Training using special instruments)



The Gem and Jewelry Institute of Thailand

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GIT human resources developments



GIT's Information Centre

To create gem and jewellery databases for the industry

ศูนย์ข้อมูลพัฒนิกฤตศาสตร์ของประเทศไทย
 >> **โครงการพัฒนิกฤตศาสตร์ของประเทศไทย**

วัตถุประสงค์
 เพื่อพัฒนิกฤตศาสตร์ของประเทศไทยให้มีความทันสมัยและทันต่อความต้องการของภาคอุตสาหกรรม

ขอบเขตการดำเนินงาน
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ศูนย์ข้อมูลพัฒนิกฤตศาสตร์ของประเทศไทย
 >> **โครงการพัฒนิกฤตศาสตร์ของประเทศไทย**

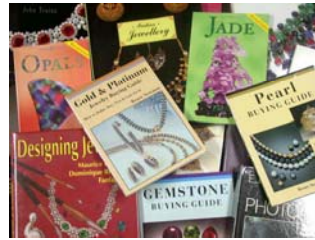
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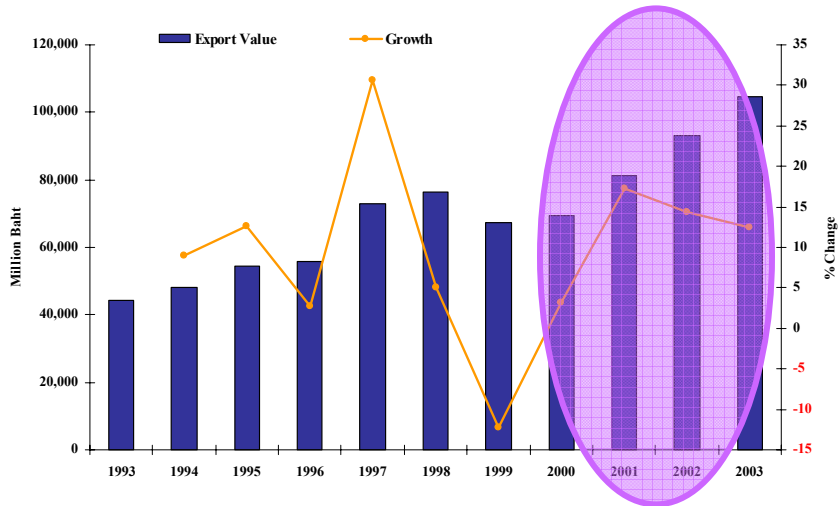

Gem & Jewellery Library and Museum



Achievements of GIT



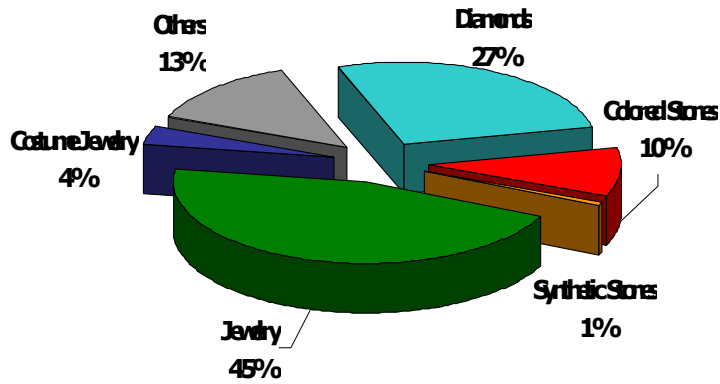
Thai Gem & Jewelry Exports during 1993-2003



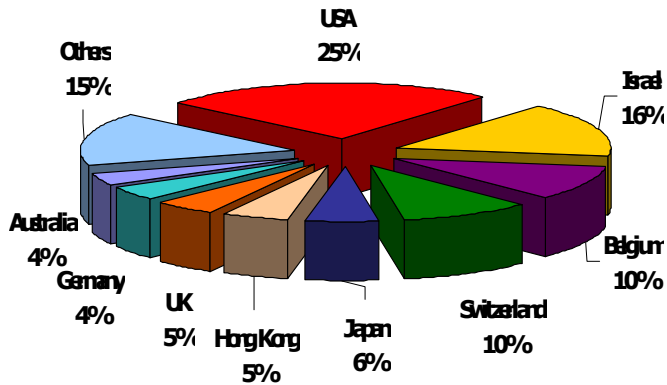
Source: The Gem and Jewelry Institute of Thailand in collaboration with Thai Customs Department



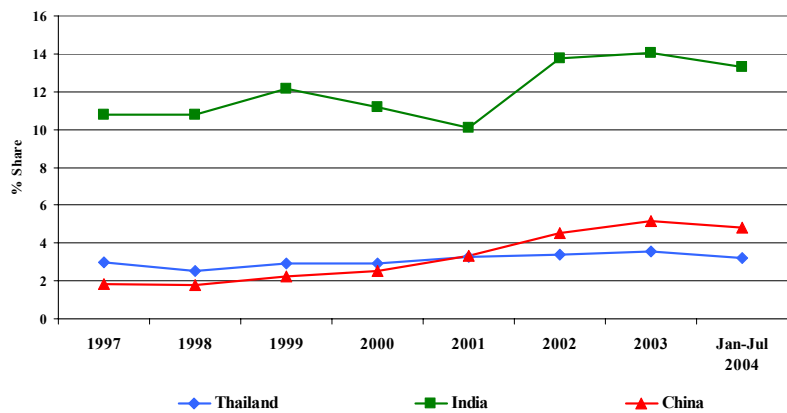
Thai Gem and Jewelry Exports (by category)



Thailand's Major Gem and Jewelry Export Markets



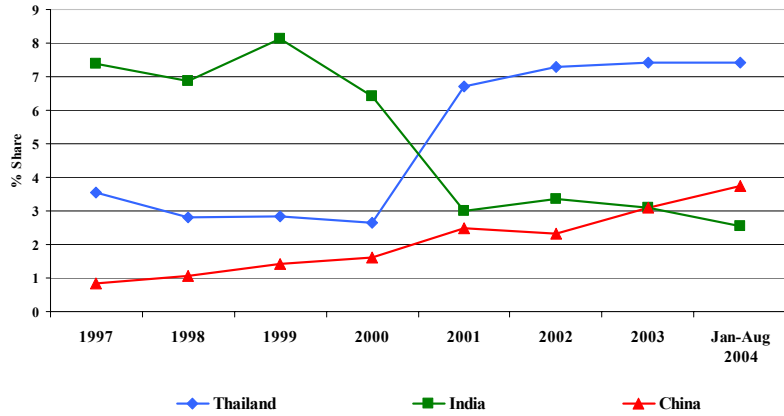
Market Share of Gem & Jewelry Imports of Thailand and Major Competitors in US Market



Source: The Gem and Jewelry Institute of Thailand in collaboration with Thai Customs Department



Market Share of Gem & Jewelry Imports of Thailand and Major Competitors in Japanese Market



Source: The Gem and Jewelry Institute of Thailand in collaboration with Thai Customs Department



The Gem and Jewelry Institute of Thailand

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CIBJO Registered Laboratory



The Gem and Jewelry Institute of Thailand

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**A Member of
Laboratory Manual Harmonization Committee**



- Participant in the GILC (Gem Industry and Laboratory Conference)
- CIBJO Colour Stone Steering Committee
- Delegates of the IGC (International Gemmological Conference)
- Representative of TGJTA in Technical Contributions of the ICA (International Colour stone Association) and CIBJO Congress



- Success of The GIT over its missions by time factor
Reasons: Strong technical background
(human resources),
 - : neutralization (unbiased),
 - : research-based, information-based
 - : modern equipped and co-operations.
- Successive progress in world market of The Thai Gem and Jewellery Industry
- Besides, there're also "Tears and Thorns"



Next Step for Thai Gem and Jewellery Industry

- Ⓢ Having achieved a prominent position on the gem and jewellery map of the world, the Thai industry and government are now involved in defining the contours of future development of this industry
- Ⓢ The government VAT on gold in September 2000 and The VAT on imported gemstone was recently exempted
- Ⓢ This will create the needed atmosphere for a rough stone one-stop shopping centre as well as a bigger trading base



Conclusion: The Success of the Industry at present and future

- ✎ Gem mining investment and ample supply of raw materials
- ✎ Appropriate technology in gem mining and gem treatment
- ✎ Fine craftsmanship
- ✎ Reasonable labour cost
- ✎ Attractive investment incentives



Conclusion (cont.):

- ✎ Applied Modern Technology
 - ✎ Silver Jewellery
 - ✎ Cutting
 - ✎ Jewellery design etc.
- ✎ Tight cooperation between government & private sector
 - Establishment of GIT since 1999
 - Promotional activities: Bangkok Gem Fair,
: Bangkok Fashion City Project



Thank You

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